The Lumleian Lectures

ON

HEART INFLAMMATION IN CHILDREN.

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LECTURE III.

MR. PRESIDENT, FELLOWS, AND GENTLEMEN,—In the last lecture we were led to consider the service of percussion in estimating the area of cardiac dulness at various ages and in several conditions, together with the manner of the heart's displacement with the gradual increase of pericardial fluid. The earlier physical signs of endocarditis were then discussed, and the opinion was expressed that these signs, varying widely in various cases and scarcely within reach of words, became significant in their combination and by the comparison of to-day with yesterday. Finally, examples were given both of the sudden and of the gradual development of morbid sounds, mitral murmur occurring not seldom as the sequel, and not the accompaniment, of a child's first rheumatic attack, of short duration and no severity.

It remains to consider some further signs of endocarditis referable to the right and uninflamed side of the heart, to estimate the nature and frequency of mitral narrowing in the child as compared with the adult, and, in conclusion, to add but a few words on prognosis and treatment.

Endocarditis does not at first, we say, produce regurgitation, or, at least, does not produce it by any defect on the part of the mitral valve itself, muscular incompetence, and the share in closure belonging to the muscular fibres surrounding the mitral orifice being left out of the case. Yet inasmuch as endocarditis concerns the fibrous structure of the left side of the heart, and not only so, but extends to the heart itself, to the papillary muscles and their tendinous cords, it is of necessity that this inflammation should produce physical changes beyond the valve itself. And the effect is this: the muscular weakening of the inflamed left ventricle impedes the onflow of blood and tends to engorgement of the pulmonary vessels. This in its turn, as Sibson has pointed out, reflecting on the right ventricle, leads to accumulation of blood therein, which is relieved by tricuspid regurgitation, what has been called "safety valve" action.

If this be so it follows that in endocarditis it is not the left and inflamed side of the heart that will give the first note of suffering; it is the right and uninflamed side, and tricuspid murmur is the early signal of endocarditis as well as a token of relief.

There are many obvious reasons why this early occurrence of tricuspid murmur should be overlooked—the existence of old valve disease, the short duration of this sign and the speedy oncoming of mitral murmur to obscure it. It is only in a first attack and with the happy chance of early observation that tricuspid murmur gets noticed.

Something also may be allowed for the habitual neglect of the right side of the heart, with the knowledge that the actual seat of disease is assuredly the left ventricle and not the right. Yet, with all this allowance, it would still seem that upon the hypothesis tricuspid murmur should be met with oftener than it is as an early sign of endocarditis. The explanation is, I think, that there is a concurrent or even a yet earlier effect of endocarditis—namely, disturbed cardiac rhythm

However early the transmitted effect of left-sided endocarditis upon the right ventricle, the immediate effect, as regards the left ventricle itself, must be earlier still. This effect is no other than an irritability of the cardiac muscle, due to the altered relation between the inflamed endocardium and the blood that visits it. Tumultuous cardiac action, its variability, reduplication of the second sound and altered character of the first are joint signs of this irritability. They are not wholly reliable signs of endocarditis, but they are, in Sibson's phrase, its "threatening," and when in connexion with rheumatism they make it "probable."

Tricuspid murmur in these circumstances may so soon be followed by mitral as to be overlooked; but given a previously healthy heart, early observation of the patient, and, it must be added, the care to discriminate tricuspid murmur from mitral, and there can be no doubt that the sign upon which Sibson laid so much stress is not seldom met with.

I may quote a few recent examples:—

H. W——, a boy aged eleven, was admitted to the Westminster Hospital on Oct. 24th of last year, having been ill three days with his first attack of rheumatism. He was suffering from pain in the knees and ankles; the temperature was 102° F. There was neither swelling nor redness of any joint, and on the fourth day—that is, a few hours after admission—the fever left him. On the third day the boy seemed well. The area of cardiac dulness was normal, and it was not until the fifth day from the first rheumatic pain (26th) that anything unnatural was observed of the heart. On that day the rhythm became uneven, and a slight systolic murmur was heard at the ensiform cartilage, but less audible at the apex. The pulse was 84 and ill-sustained, varying in force, that is to say, markedly, when continuously felt over a period of three or four minutes. A week later, Nov. 6th, the tricuspid murmur was still audible, not blowing, but with that rough beginning that some christen "presystolic." At the apex the first sound was lengthened and murmurish. It happened with this boy (as with the girl E—— mentioned in the last lecture) that on standing up the murmur was immediately lost. The experiment was repeated several times, always with the same result. We were not able to retain this patient for prolonged observation like the last.[1]

Shortly after this a girl aged eighteen (A. H——) was admitted on the ninth day of her first attack of acute rheumatism. On admission there were pericardial murmur and rubbing, and at the ensiform cartilage a systolic tricuspid murmur. Both joint pains and pericardial rubbing quickly disappeared, and on the girl's discharge, after three weeks' residence, a soft apex mitral murmur had taken the place of the rougher tricuspid murmur.

A third case might be quoted occurring at about the same time—that of a boy aged ten in his first attack of rheumatism with heart pain. At first no cardiac murmur was audible, and the earliest physical sign of valve lesion was again tricuspid in seat and character.

In these and in other cases that might be quoted the rheumatic attack is the first, and is neither severe nor prolonged. The tricuspid murmur sometimes is transferred to the mitral, and sometimes upon its disappearance the heart sounds again become normal.

There are many varieties of first sound that depone more or less certainly to commencing endocarditis—for instance, the first sound becoming loud or prolonged, or doubled; but these are all characters of which the value depends on the comparison of one day with the next. A prolonged first sound in a patient suffering from rheumatism presently becomes murmurish, though no definite murmur can be alleged. And the *quality* of the sound is altered, as well as its duration; it becomes rough, sometimes begins with an accent, and is continued right on to the second sound. Unfortunately these morbid sounds are difficult to describe. Such words as "rolling," "rattling," "churning," and many more, hardly suggest to a novice what sort of sound he is to expect. They are to be learnt, not from the book, but at the bedside, and after patient and, as it may at first seem, profitless practice they will suddenly strike upon the ear and become his possession for ever; but it is knowledge which is not transmissible, and remains each man's secret in spite of his best efforts to communicate it.

There is less difficulty in describing the precise time and place of added sounds in the heart's revolution, but even that point is not determined in a moment. In the child the heart rhythm—that is, the exact sequence of sounds and pauses—is ill expressed. It is not always realised that the acts of the heart are represented partly by sound and partly by silence and that defective action is detected rather by the silence being broken than the sounds altered. In the long silence especially—silence which is not rest (in the period, that is,

[1] A remarkable fact was that with the disappearance of tricuspid murmur in the upright position there occurred on three separate occasions a perfectly distinct true diastolic murmur, replacing exactly, as appeared, the proper second sound at the apex, and immediately disappearing when the boy was recumbent. The phenomenon, which was observed by many, was lost before his discharge.

of ventricular diastole), whatever noise intrudes is morbid. But with children, and especially when the impulse is obscure, it is a nice point to decide whether intruding sound is just without or just within the proper long silence—whether, in other words, such sound coincides with quite the end of diastole or just the beginning of systole—whether it be presystolic or early systolic. These two murmurs represent of course perfectly distinct acts on the part of the heart, ventricular dilatation and contraction; yet they both join on to the first sound and in some cases neither is much conducted from its place of origin. And there is another point of which Dr. Paul Chapman reminded us in his valuable Goulstonian lectures. Before any final statement can be made as to the significance of cardiac sounds we must know whether such sound is valvular or muscular, connected with the closure of the valves or with contraction of the muscular fibres.

The term "presystolic" is made use of just now with little precision, and when no more is intended than that the first sound begins with an accent. Presystolic murmur is far from common among children—it depends upon structural changes that need time to accomplish. Early systolic murmur, on the other hand—a harsh beginning of the first sound converting "who" into "through"—is perhaps commoner with them than with their elders. It may arise early in the course of rheumatism, and in a first attack of it, and may quickly disappear or tone down into a soft, blowing systolic murmur.

I have no desire to enter upon any matter of doubt or controversy, but the light-hearted way in which the word "presystolic" is sometimes used, coupled with the peculiar circumstances of the child in reference to mitral narrowing, may perhaps excuse a few words upon the subject. The real presystolic murmur is express, as are the causes on which it depends. It indicates not only difficulty in the auriculo-ventricular passage, but the particular way in which that difficulty is overcome—namely, by the suddenly aroused energy of the auricle at the end of its work. Arising precisely as this mechanism would lead us to expect, within the long silence of ventricular dilatation, it grows and gathers with a thrill right up to the first sound, which abruptly ends it, a further sign consisting in over-distinctness of the second sound at the second left cartilage, due to extra-pulmonary resistance.

For the production, therefore, of presystolic murmur there needs not merely a contracted mitral orifice, but the service of a hypertrophied auricle. When either of these elements is wanting, whether the narrowed passage or the extra power necessary to overcome it, there is no sound heard within the proper silence—no audible pushing, so to speak, with a view to supplying the ventricle efficiently with the blood, upon which it will presently close, no presystolic murmur.

And so it is common to meet with extreme constriction of the mitral after death where no presystolic murmur has been audible in life. That is the case, said one of wide experience, Dr. Hilton Fagge, "in the large majority of cases." It is common also in life to find the auricle failing temporarily or permanently to perform its extra work; and in that case, inasmuch as every stenosed mitral is also incompetent, presystolic murmur becomes replaced by regurgitant murmur.

No murmur is to be called presystolic unless it can be demonstrated that it precedes the impulse. I know that some observers have demurred to this test, asserting that in mitral stenosis it is the right ventricle that initiates ventricular contraction, the left being a thought behind. All are agreed, however, as to the difficulty of timing the sound. "It must not be thought," says Dr. Sansom, "that the question can be determined without considerable care and difficulty"—"difficulty so great," said Dr. Stokes long before, "that we cannot resist altering our opinion from day to day as to which is the first sound, and which the second. It is exceedingly dangerous to accept diastolic mitral murmur occurring anyhow and anywhere—at *some* time within the long silence—as being evidence of a *degree* of stenosis.

While, therefore, the well-marked characteristic presystolic murmur, with its gathering force, its sudden end, succeeding shock, and accentuated pulmonary second, are reliable physical signs of notable mitral narrowing, we cannot trace by physical means the degrees of this change or watch the progress of mitral stenosis from little to much.

Now, as a matter of fact, it can be shown that the conditions necessary for the production of presystolic murmur are not often met with in children. The post-mortem experience of eleven years at the Hospital for Sick Children supplies but a single case of "buttonhole" contraction of the mitral valve, and this one, a boy aged nine with cellulitis, was not connected with rheumatism. There are two cases of undoubted mitral narrowing in connexion with rheumatism and two with but slight stenosis in the same relation. These four presented the physical signs of narrowing, including "presystolic" murmur during life; but this same term "presystolic" is by no means confined to them, but appears in the histories of at least nine, probably eleven, of the children who showed no mitral stenosis post mortem.

In my own clinical notes of the past three or four years, referring to 50 cases, I find 11 illustrating this point. There was marked stenosis, with its proper physical signs, in 1; slight stenosis with "presystolic" in 1; in 5 thrill and "presystolic" murmur showed no stenosis post mortem; and in 4 presystolic murmur disappeared in the later stage.

PRESYSTOLIC MURMUR IN CONNEXION WITH MITRAL NARROWING.

A.—Post-mortem Summary.

1. Marked stenosis, "buttonhole," with presystolic murmur (not rheumatic)		1
2. Stenosis without presystolic murmur		1
3. A degree of stenosis with "presystolic" murmur—viz.:		
"Slight" in	2	5
"Some" in	1	
"Mitral admits thumb" in	1	
"Stenosis, not further described," in...	1	
4. No stenosis with "presystolic" murmur in...		11

N.B.—In 8 of 19 mitral thickening is noted, but not stenosis.

B.—Clinical Summary.

1. The murmur disappeared in ...	5 (Nos. 1, 2, 6, 10, 11)
2. The murmur appeared within two or three weeks of the first rheumatic attack in	3 (Nos. 3, 5, 11)
3. No narrowing was found post mortem in *	4 (Nos. 4, 7, 8, 9)

* In 2 of these the mitral was thickened.

If we take by contrast the case of adults it will be found that the "buttonhole" form of stenosis is by far the commonest. Thus in 47 cases by Dr. Fagge, 46 were of that kind against 1 funnel-shaped; while in 40 under Dr. Sansom's care 19 were of that form, against 15 funnel-shaped and 6 not particularly described. It may be added that Dr. Sansom reckoned but half his cases to be rheumatic, while Sir Dyce Duckworth found 60 per cent. of that origin. It thus appears that post-mortem evidence upon the vexed question of presystolic, as opposed to early systolic, murmur wears a somewhat special aspect in the case of children owing to the rarity of that marked chink-like narrowing of the mitral orifice, which alone is to be depended on (provided there be auricular hypertrophy) to furnish the combined physical indications of stenosis.

The chief form of rheumatic mitral endocarditis met with in children at an early stage consists, as is well known, of a ring of minute granulations edging the valve, but not appreciably constricting it. These effect no more, indeed, after the active stage of inflammation has passed than to cause the blood to pass over a rough surface instead of a smooth one. A later stage is not in the way of narrowing, but of stiffening, as regards the mitral flaps and chordæ tendineæ. Such a condition seems fitted to produce delay in closure rather than any material hindrance to the onward blood flow. "It is the case of a valve delayed in its closure by rigidity," as Dr. Dickinson expresses it, "but which yet shuts at last."[1] Valves so circumstanced permit regurgitation at the first part of systole; they are slowly raised during that act, and in the rising the stiffened valve apparatus itself may emit sound. The early thrill is caused, as Dr. Seymour Taylor[2] has pointed out by these stiffened flaps "held edgeways to the regurgitant stream."

The rough or accented beginning of the first sound has nothing to do with stenosis. I do not say that it is unconnected with some hindrance, often temporary, to the onflow of blood, or that persons who have exhibited this physical sign in childhood may not get mitral stenosis later on; but the earlier stages of this chronic process do not suffice for the production of true presystolic murmur, but merely of its rough counterfeit. The notion that mitral stenosis can be watched

[2] THE LANCET, Nov. 15th, 1887.

through all its changes from early childhood onwards is, I am persuaded, erroneous.

In no respect is the presystolic better contrasted with the early systolic murmur, or accent, than in this—that the former, depending upon precise and definite morbid changes—mitral constriction, auricular hypertrophy—is always of one pattern, be it more or less distinct, while the other varies with the time and according as the endocarditis is acute or chronic. Without denying, therefore, the special significance of these signs of stenosis, first pointed out by Gairdner, there are reasons enough, both clinical and anatomical, why those signs should be found very sparingly among children, almost never among very young children.

Of all the morbid sounds of the heart whose meaning we guess at with more or less probability there is none that to me seems more obscure than true diastolic murmur at the apex. In the easy language of the wards we often hear of "double mitral murmur." What is meant is sometimes a presystolic with a systolic murmur, and sometimes, mostly in the case of children, a rough accent beginning the first sound, with a blowing murmur following it. But neither of these is properly double mitral, a murmur with the first sound, and a murmur with the second sound comparable with the familiar and easily understood double aortic murmur.

How can a presystolic murmur exactly replace the second sound, as in the proper double mitral it certainly seems to do? Dr. Walshe meets the difficulty by observing that "the diastolic murmur is rarely loud enough to cover the second sound completely. It is commonly spoken of," he says, "as diastolic in rhythm, but in point of fact it is rather post-diastolic and presystolic than precisely coincident with the diastole."

Another suggested explanation (and in some instances, no doubt, the right one) is hardly applicable to children. It is that the diastolic murmur is really aortic. "In a small but interesting proportion of cases," says Dr. Bristowe, "systolic murmur is associated with a true diastolic mitral running up *from* the second sound and tending to die out in the diastolic silence." "It may be confounded," he adds, with the diastolic aortic. Laennec's "diastolic mitral" was, in his view, in reality aortic, and probably Hope's also. But what of the little children with whom aortic disease is rare, but this form of murmur, a true double mitral, common?

Dr. Dickinson, as is well known, does not so interpret Hope's murmur, but regards it as truly mitral diastolic and clearly distinguishable from the so-called presystolic, which, in his view, is really a reflux. "This so-called presystolic murmur," he says, "is supposed to precede the systole, but actually accompanies it, as determined by its relation to the impulse. The early part of the first sound is obscured or replaced by the murmur; the terminal slap or knock is the only part of the first sound that remains; it is caused by the delayed closure of the mitral valve, which puts an end to the murmur, which is truly mitral regurgitant."

I have tried to show that, in the case of children at all events, post-mortem evidence is all in favour of such an explanation of that early and rough murmur which habitually goes by the name of presystolic. But I cannot doubt that marked stenosis with hypertrophied auricle—a disease of women rather than of children—has physical signs of its own, and that these have been accurately defined by Gairdner and Fauvel.

A few words will suffice for all that can be usefully said of prognosis.

Rheumatism, we say, is the main cause of heart inflammation. But what *is* rheumatism? Of late years its area has been more and more extended, and in the process the substance of it has so thinned out that its proper shape is hardly discernible.

Pleurisy, pneumonia, and tonsillitis, we are told,[3] may all be rheumatic, though unattended by joint or limb pains. And further—if further there can be—Sir Dyce Duckworth in a lecture published this week[4] announces "rheumatism of the brain, probably the cortex," not anatomically known, but having the chorea of children as its outward and visible sign, a trifling ailment for so alarming a lesion; the effect is patent, the alleged cause awaits discovery.

Rheumatic phenomena being thus indefinitely multiplied, who shall say what rheumatism is in itself? The forms of gout are multiform, but they are held together in some sort by reference to urinary changes common to them all. But nothing holds rheumatism, it has been hunted to death. There is an "idea" of rheumatism, but it is fast becoming an abstraction like the Eternal Noumenon of the old philosophy.

But if rheumatism—whatever its criterion—be the cause of carditis, what is its own cause? It is called a chill disease, but not a tithe of the cases, even of unequivocal polyarthritis, have their origin in exposure. In 608 consecutive examples collected by Dr. Syers only 33 could be so attributed.[5] Let us double that number in virtue of the class represented, many of them careless labouring people, habitually exposed, and no nice to reckon as to more or less of exposure; even so, hardly a tenth can be so counted. In the great majority the cause is conjectural. Sometimes it seems to be the result of bodily fatigue, sometimes of mental distress; sometimes, in children at least, of improper feeding. Where the causes are so various the effect will vary too. And no help to prognosis is likely to come from any consideration of the supposed origin of the rheumatism that attends it.

Yet there are certain circumstances of undoubted service to prognosis: age, previous attacks and the disposition to rheumatism, whether more or less, which these imply; and, as applying to the particular case, nervous implication; the presence of subcutaneous nodules; the changeful or the fixed character of the physical signs; the prominence or otherwise of heart pain or uneasiness and of precordial tenderness; the degree of pallor and the rate of wasting.

As for age, rheumatism occurring at an unusually early period of life, say at four or five, is very nearly allied to carditis and sometimes shows itself chiefly by heart inflammation. It may be said without qualification, other things being equal, that the younger the child the greater the peril to life.

There is a form of rheumatism almost peculiar to children, which carries, I believe, a special danger. It is when a succession of attacks come so near together that they are often reckoned as one prolonged attack. Sometimes there is a sort of periodicity in such seizures, the mother saying that they happen every month or every fortnight. If we reckon, as in the case of a young child we safely may, that every one of such successive attacks (however little severe in itself) is a fresh injury to the heart, the ill effect of these multiple attacks is obvious. Older childhood is far less subject to this manner of repeated rheumatic visitation; and on that account, as well as because the increase of years of itself lessens the danger of carditis, the child past eight or nine, the subject of acute carditis, is far more secure than he would be at an earlier age.

In the same bad category must be placed cases such as I have already quoted, where an acute rheumatic attack is presently repeated, in respect of its pyrexia and sweating; but this second time the symptoms are cardiac, and not articular.

Of physical signs in their bearing on prognosis it may be said that, so long as such signs are recent and refer only to the endocardium, the fear of pericarditis and of the development therewith of the active signs of carditis, a fear which can never be absent, is more or less, according as the heart's conduct varies or does not vary from day to day.

So long as the physical signs, any or all of them, that have tried to describe as indicative of early endocarditis are *changeful*, so long in my experience, however quiet and restful the child, there is real danger, a danger which only lessens with the settling down, so to say, of the heart.

In a case I have already quoted these changeful physical signs continued for forty days with no general symptoms whatever to cause anxiety; but on the forty-first day pericarditis appeared, with constant vomiting, delirium, and extreme restlessness, the right ventricle becoming extremely dilated, and the child very quickly died.

It thus appears in regard both to external and internal inflammation of the heart that the physical signs of both gain significance from their changefulness. So long as endocardial murmurs and cardiac rhythm alter in character from day to day, so long is there active endocarditis. And similarly, as has been shown, daily changes in the area of pericardial effusion, whether of increase or decrease, are chiefly significant as showing that the inflammation is still acute.

It has been abundantly shown how largely the nervous element enters into the natural history of carditis in childhood and affects its mortality. The appearance, therefore, of such symptoms in whatever degree at an early stage of

[3] Dr. Mitchell Bruce, Brit. Med. Jour., April 26th, 1890.
[4] Clinical Journal March 14th, p. 307.

[5] Westminster Hospital Reports, vols. I.-IV.

endocarditis—vomiting, severe headache, sudden weariness, passing delirium, uneasy sleep with night terrors: any of these ought properly to cause anxiety, however favourable the child's progress in other respects.

In one of the cases included in my review a boy aged nine in his first attack of rheumatic endocarditis had, on admission, some passing delusion as to his father being at his bedside. At the time he had no other bad symptom, but presently acute carditis developed and he narrowly escaped death.

Finally, my experience fully accords with that of Dr. Cheadle, so ably detailed in his Lectures on Rheumatism in Children, delivered before the Harveian Society, "Manifestations of the Rheumatic State," as to the evil import of subcutaneous nodules.

The clinical picture of carditis in children, gloomy as it may seem, is not without light, and may even be brighter than it first seems. We call to mind a large number of rheumatic children appearing and reappearing in their successive attacks with shorter and shorter intervals of ease. We see them presently becoming chronic sufferers, and at last either perishing quickly with acute suffering or else lingering on with hearts incompetent and dyspnœa, dropsy, and other distress. Long observation of these children in their coming and going, the hope of recovery repeatedly disappointed, the growth of friendship between doctor and patient as time passes: all these things make our memory of such patients peculiarly distinct and vivid and their fate distressing. But we are to consider that it is only those that thus decline that are thus remembered. The rest are forgotten. There is no returning to give thanks on the part of those that recover. Thus, whatever the number of these, circumstances conspire to make them seem less than they are. And there is at least this happy feature in the child's case which age may envy. Children have no future, and the anxiety and despondency of their elders in a like state are unknown to them.

I would add a few words on the medicinal treatment of active carditis.

So undoubting was the reliance on drugs fifty years ago that Dr. Latham (of whose labours and success in search of the very earliest signs of the disease I have already spoken) exclaims in an ecstasy, "The gain of a single day in the treatment of endocarditis is a gain indeed." In a different spirit an eminent physician of our own day, replying to a practitioner who regretted that he had overlooked pericarditis in a case of rheumatism they were seeing together, is reported to have said—perhaps not quite seriously: "Make no apologies—if you had discovered it you might have treated it."

It is of interest now to observe the point of view whence rheumatic carditis used to be regarded and the plan of treatment that resulted therefrom. It is of yet greater interest to note the remarkable fact that the characteristics of child's rheumatism, and notably its moderate fever and slight pain, did not serve to exempt children from all the rigours of the antiphlogistic treatment.

"I know of no disease," says Latham, "in which febrile heat is greater, and the pulse harder and more forcible than in acute rheumatism. What are the signals for copious blood-letting if these are not? There is no disease in which pain is more prominent, abiding, and characteristic; hardly any in which it is more severe and more extensive. It is the sort of pain which arouses and excites, and however long it may continue, even for several weeks perhaps, it still rouses and excites to the last."

That this is no picture of child's rheumatism need not be said. It seems to follow that the treatment might reasonably be modified in the case of children, so as to suit the milder symptoms; but the old writers admit no such exception. A single passage throws vivid light on the practice of those days and its consequences.

"In eighteen cases of pericarditis," says the physician I have just quoted, "I lost three. All were treated by mercury; some were brought under its sensible influence very largely, and some very slightly, but all in a certain degree except two—two of the fatal three. These two, healthy subjects in the prime of life, would not become salivated. Though mercury was given in large quantity, and for a long period, yet was there no sensible ptyalism, no fetor of the breath, no complaint of soreness of the gums. Every conceivable circumstance was present which could promise success to medical treatment. Healthy subjects in the prime of life, and the disease detected as soon as it arose. Not a moment was lost in the application of remedies. They were venesection, cupping, leeches, and blisters and opium, and from first to last mercury. But the mercury did not produce the peculiar effects of mercury in the slightest appreciable degree." They would not become salivated, and so (as is inferred) they died.

Here is the keystone to the treatment of that day. Bleeding was beginning to be used with some restraint (and Latham especially was wisely moderate in this respect), but bleeding alone would not suffice, mercury must go along with it, and this not in stated doses, but in such amount as should as quickly as possible "touch the gums." When this particular symptom of mercurial poisoning was delayed the mercury was "pushed" to the utmost degree. Yet some (these two healthy subjects in the prime of life, for example) *would* die unsalivated.

It is easy to criticise at this safe distance of time. Therapeutics is a halting art, and there is abundant evidence of the shrewd and careful observation of the old masters. Nevertheless, with our later experience it may be open to doubt whether the early advent of salivation and the consequent suspension of mercury did not bring a blessing to the patient less by virtue of its healing than of its poisonous qualities.

We are, perhaps, too much in the habit of assuming that the rate of mortality of certain acute diseases—notably of pneumonia—is less now than it was early in the century. It is a delusion, as statistics prove; but, in the case of pericarditis, anyone who reads its literature will, I think, become convinced that it was more formidable under the old methods than now. The whole portraiture of the disease gives evidence of this. One of its chief and earliest historians, Sir Thomas Watson, speaks of the great danger that belongs to every case of acute pericarditis, "of the danger of speedy death," and so forth (speaking, remember, of the adult, not of the child). Such language would be inappropriate at the present time. No one doubts the gravity of rheumatic pericarditis as regards the future, but except in the case of children (who are not here in consideration) the immediate danger to life is very small.

Such considerations as these would seem to furnish the very strongest reason for departing from ancient traditions without more ado; but it is not so. The old treatment was at least precise, emphatic, uncompromising, and it lingers still robbed of all those characteristics. Fearing to break away altogether from the old practice, we have toned it down, reduced it to a dead formula, and catch at every excuse for evading it. Hence arises an uncertain voice and even some disagreement. "Counter-irritation is of considerable value,"[6] says one; "blisters should be shunned," says another. "Blood may be taken from the arm," says one text-book, "but preferably by cupping or leeching." "Venesection is never admissible," says another.[7] "A few leeches may *sometimes* be applied to *robust subjects*," but, as a rule, heat and moisture are to be preferred, though whether heat or cold is the better application is a matter of doubt. "The treatment of pericarditis," says yet another, "merges itself in the treatment of some other disease. Why should we change our treatment because the pericardium happens accidentally to become inflamed.[8] All these are literal quotations from as many recognised text-books of the present time.

With all their difference, what is it that they concur in indicating? Is it not that the treatment of pericarditis just now, like the treatment of pneumonia, of pleuritis, of meningitis, is the treatment of symptoms, and nothing more? The old remedies are still invoked, but there is no ring of sincerity in the invocation. What we really believe more and more—what Parkes, Hughes Bennett, Gull, and others pointed out—is that disease processes are not arrested, but may, in a measure, be directed. The easing of pain by local appliances, the procuring of sleep therewith, the timely withdrawal of blood to relieve venous congestion and cardiac dyspnœa—all these are measures that are truly life-saving; but the course of inflammation is little, if at all, affected by such means.

Commenting upon such views as contrasted with those of the past, Dr. David Lees, in an able and interesting paper on the treatment of pericarditis,[9] pertinently writes, "How many of the old formidable measures are in use to-day?

[6] Bristowe's Medicine, p. 530.
[7] Roberts' Practice of Medicine, fifth edition, p. 501.
[8] Balfour, p. 326.
[9] THE LANCET, July 22nd, 1893.

Three or four leeches, or a single small blister represent the maximum therapeutic attack on the disease from without, whilst a little morphia alone remains as the representative of the active medication of former days; that is to say, that we have given up the idea of curing pericarditis."

Most truly; and, in the modern sense of that word "cure," we have given up the notion, not merely of curing pericarditis, but any visceral inflammation whatever. Without at all disputing the formidable, even the dangerous nature of the old measures, especially in the case of pericarditis, I would urge that Dr. Lees does some injustice to such means of relief as we possess, by placing together, without distinction of relative value, bleeding, counter-irritation and morphia. In the abstraction of blood (by leeching, as a rule) we possess, in my belief, the most potent means of relief for those sudden attacks of dyspnœa which in the case of children are apt to be so rapidly fatal. Blisters do neither good nor harm, and it is pretty plain that the text-books think so in urging as sufficient objection to their use their interference with the use of the stethoscope. Digitalis still, to quote my own opinion (though it is that of high authorities as well, notably of Dr. Stokes), is worse than useless in the acute cases we are now considering.

For the rest, I should be in full agreement with Dr. Lees as to nursing and the means for relieving pain, though demurring a little to the statement that "we have made the discovery that the salicylates are curative of the rheumatic process."

"Have we then," says Dr. Lees, "no means of combating pericarditis as a local inflammation?" And he answers himself, "I maintain that we have; it is the local, persistent application of cold."

Time will not serve for stating the arguments upon which this opinion is based. All who are acquainted with Dr. Lees will be prepared to find in his paper a lucid, logical, restrained, if somewhat enthusiastic, statement of the case. And yet I cannot persuade myself, looking back upon many cases of fatal carditis, that chilling the surface of the chest by means of ice would have saved them or some of them. My trials of that remedy have not, as a matter of fact, had that result. The application of the ice-bag, whether in pericarditis or in pneumonia, is, in my experience, sometimes grateful and soothing, sometimes taken with indifference, and sometimes so strongly resented by the patient that no one would think of persisting in its use. It has seemed to me to be of greater service in relieving the distressing pleural "stitch" of pneumonia than in pericarditis, where pain is less common and more fitful.

Everything depends on the selection of cases; and surely there is no disease whatever wherein it is more easy to separate critical cases from the rest. Passive carditis, be the physical signs what they may, does well enough. It is precisely at the moment when such symptoms intrude, as I have repeatedly dwelt upon, restlessness, dyspnœa, delirium, that danger begins, and very grave and immediate danger. If by the application of ice to the heart in cases like these the children habitually recover Dr. Lees' contention is made out, but only so. Recovery without classification of cases proves nothing. The efficacy of the remedy can only be tested when the need for it comes.

In conclusion, it may be said with confidence that the outlook of pericarditis where adults are concerned is much more favourable than it used to be; and if it be true also that children have not as yet shared in this improvement, it must be remembered that there has been some neglect in their case and less time for accurate observation. There is strong hope for the future in the pathology of heart inflammation; for it represents an organ for the time disabled, yet structurally but little altered. The condition is one that especially invites therapeutical aid, and already there are indications that such aid is forthcoming. Sober investigation, however, is of slower pace than the demands and assertions of the drug market. Hopeful work is being done, and with drugs, but it is as yet too early to announce conclusions.

In bringing these lectures to an end I cannot omit mention of the ready help and coöperation of my colleagues, especially Dr. Garrod, Dr. Batten, Dr. Walsham, and Mr. Winckworth. Indeed, I have been helped by so many that, could I be certain that they would warrant my facts and accept my conclusions, what has been put before you might be taken as a joint contribution.

It only remains for me, Mr. President, to express to you and to this audience my thanks for the kind attention with which you have honoured me.

ABSTRACT OF

The Ingleby Lectures

ON

THE COMMON FORMS OF DYSPEPSIA IN WOMEN.

Delivered at Mason College, March 22nd, 1894,

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LECTURE II.

GENTLEMEN,—In the preceding lecture I have endeavoured to lay clearly before you the true cause and nature of groups of symptoms which constitute the common forms of dyspepsia in women, so that it becomes easy to explain the second part of my subject—that is, the treatment which they demand and by which they may be successfully encountered.

Rest.—It is an old maxim that "prevention is better than cure," and preventive medicine has in these days received high and due recognition from our governing bodies and is performing a most important and beneficent function; but there are many diseases which depend to a great extent upon social causes, the roots of which lie too deep to have been touched at present by our legislators. Of these our present group is an instance, depending as it does upon the unsatisfactory position of women, especially in the poorer classes. Is the life of drudgery which is the lot of so many of them inevitable? This is a question which cannot be discussed at length here. But some of the causes are not irremovable; for example, early improvident marriages, drunkenness on the part of husbands, too large families; want of economy and method in the management of money, time, and labour; want of consideration on the part of those who are set over them—husbands, masters, and mistresses; and the employment of married women and mothers of families in factories. One of the most philanthropic of our local manufacturers, who employs a large number of women—I allude to Mr. Cadbury—I understand refuses to keep them after they marry, and this wise rule has the good effect of discouraging early and improvident unions, while it impresses upon the people the important truth that a married woman's work should be the care of her home and children whatever her station in life. The value of this rule is brought home to us in connexion with this group of diseases as met with among women of the richer classes, for it is especially in those over-active, excitable women who are always doing so much—that is, finding occupation and excitement away from their homes—that these troubles are commonly met with. I do not wish to say a word in disparagement of the many useful spheres in which this activity has shown itself in modern times, but most of us have certain limits to our capacity for work, outside which our health suffers, and inside which it is our duty to confine ourselves; and I believe this obvious truth is too often disregarded by very estimable women, with the result that their usefulness is impaired and the happiness of their homes compromised. Exhaustion from over-taxing the physical and mental powers, or from other causes, being the basis of these troubles, we have no difficulty in naming the essential remedy, which is rest—rest in bed. It is a very simple means, so simple that it is frequently not acceptable to an active-minded woman who always wants to be doing something, and who feels disgusted with advice which is the very opposite of what she desires. But this must not deter us from insisting firmly on this as the foundation for all other treatment. Drugs may and do alleviate the symptoms in the earlier stages of the disease, but the patient does not get well, the mischief goes on, and in course of time more serious troubles develop, which are more difficult to cure. The duration of the period of rest must necessarily depend upon the intensity and duration of the symptoms. Such virtue is there in prolonged sleep and rest that even thirty-six hours in bed will do much in the early stage of this neurosis, but when our advice is sought it is usually for a condition of things which demands at least a week, and

commonly two or three weeks' rest. The rule is to keep the patient in bed until she has eaten ordinary diet without any discomfort for at least three or four days.

Massage.—Should there be great loss of flesh, as is the case where the symptoms have existed for some time and the amount of food taken has been inadequate to the demands of the body, seven or eight weeks may be usefully spent in bed after full diet can be taken, but under these circumstances massage and faradaism should be employed daily to aid the nutrition of the tissues and restore tone to the muscles.

Isolation.—In some patients the treatment of the case is complicated by the presence of hysteria, by which I mean a morbid mental condition, the product of excessive sympathy from injudicious relatives, which substitutes for the normal desire to get well an unnatural craving to excite sympathy and receive attention. When this exists it is absolutely necessary to isolate the patient if the treatment is to succeed. Last year we had in the hospital a young woman suffering from anæmic gastralgia and vomiting who at first did very well, but after about a fortnight she relapsed and to our dismay vomited every day for three weeks. We had not detected any sign of hysteria, but she had been the object of a good deal of interest, which may have been responsible for creating the condition. At length she was isolated and the effect was remarkable; the vomiting lasted only two days longer and she went out cured at the end of three weeks, her stay in hospital having lasted nine weeks in all. Isolation, to be effective, means separating the patient from all communication—direct or indirect, personal or by letters, messages flowers, or parcels—with her relatives and friends, or any but those who have to do with her medical care and treatment. It is impossible to do this properly in the patient's home, so that removal to a private hospital, with which this city is now so well provided, is imperative.

Climate.—When the patient is well enough to go out it is very desirable to complete the cure by change of air and scene, by which she will avoid returning to her ordinary duties, with their often unavoidable worries, and still further strengthen her mind and body. In the winter our choice of place is limited, and circumstances may impose upon us further restrictions. But the south coast watering places are generally suitable: if the weather is mild, those at the eastern end; if the weather is cold, the Isle of Wight or the more westerly resorts in Dorsetshire, Devonshire, or Cornwall. More wealthy patients may be sent to the Riviera, Cannes being especially suitable. I have found Weston-super-Mare suit these cases exceedingly well in the spring. In the summer the seaside is generally too enervating for them, though the bracing air of Rhyl benefits many poor women in the excellent convalescent institutions which exist ther for their great advantage; but higher altitudes are better adapted to restore lost vigour, and of such stations there is none better than Braemar (1200 feet), in Scotland, and none more accessible than Buxton (1100 feet). There are many stations abroad which have a reputation in the treatment of these neuroses, and at some there is the advantage of waters which correct constipation and anæmia. For a simple air station there are Wildbad (1300 feet), near Baden-Baden, and St. Sauveur (2500 feet), in the Hautes Pyrénées. Pyrmont, St. Moritz (5859 feet), and Schwalbach (1000 feet) are useful where there is anæmia; and Homburg (600 feet), Kissingen (600 feet), Marienbad (1900 feet), or Carlsbad (1120 feet), in Germany, and Châtel-Guyon (1300 feet), in France, when gastritis is more pronounced. But in the choice of a place to which to send apatient we must be guided by circumstances and the wishes of our patients.

Diet.—Man is an animal with digestive organs whose functional capabilities have their limits and whose structure is susceptible of damage, but no one would think so to see how some of us live The function of digestion consists in the reduction of food to an absorbable fluid form, and this is only possible in the case of substances which are so reducible at the temperature of the body in the presence of the secretions of certain glands. The salivary glands, which convert cooked starch into soluble dextrines and sugar, are incapable of acting upon starch if its capsules have not been ruptured by the action of heat. The fibrous envelopes, husks, stalks, coverings, and roots, and the seeds of many vegetables and fruits remain unaffected by the digestive juices, and in moderation may be beneficial by stimulating the walls of the alimentary canal, but in excess can only cause irritation and do great harm where irritative conditions already exist. Flesh of all kinds needs to be finely divided and freed from fat before the gastric juice can act upon it, so that meat in large lumps or with much fat in its fibre, as pork, for example, is digested slowly or not at all, and acts as a foreign body, a source of irritation and discomfort. Fat is reduced to oil at the temperature of the body, and as it frees itself floats on the surface of the stomach contents, where it does no harm if digestion is accomplished and the stomach emptied in the normal time; but where retention of food occurs, as in atony of the stomach, its presence favours the growth of organisms which convert it into butyric acid, a substance which is especially irritating to the gastric mucous membrane. Water, the natural drink of man, is now largely superseded amongst civilised peoples by alcoholised beverages or infusions containing stimulating alkaloids. Alcohol in its pure state is an irritant to the tissues, and this effect is only diminished in our drinks in proportion to its dilution either before ingestion or by the stomach contents. It is well known that alcohol is much better borne by a full stomach than an empty one. As a general stimulant to the circulation, it helps an overtired man to eat his dinner, but it hinders digestion. Tea, coffee, and cocoa have very largely replaced the use of weak alcoholised beverages, such as beer, among women of all classes, and therefore especially concern us. Tea is an infusion which contains a good deal of tannic acid, the alkaloid theine, a little gum, extractives, and colouring matter. The only active agents are the tannic acid and theine. Tannic acid unquestionably irritates the stomach when the organ is empty, and in that way it may set up gastritis. Theine is certainly not an irritant to the stomach, and there is no satisfactory evidence that its habitual use produces nervous or physical depression; but when, as is the case with some poor women, the teapot is made to do duty for a meal after overwork has destroyed the appetite and the energy to seek food, then it is blamed as the cause of troubles for which it affords some temporary relief. Coffee, which contains less tannic acid, and cocoa are much less commonly employed in this country, so that they concern us less closely. Coffee, unless taken after meals, is usually mixed with so much milk that the tannic acid is precipitated, and the resulting beverage is one of the best that man has devised. Cocoa, in spite of its popularity, is an uninteresting, harmless kind of drink, unless adulterated with starch, a fraud which is now much less commonly seen than was formerly the case.

Diet in gastralgia.—Subject to these considerations and limitations of what we may fairly call ordinary healthy diet, after suitable repose has restored a healthy tone to the stomach, these patients when uncomplicated by organic disease, may eat, and should be encouraged to eat, anything. Positive harm is done by dieting them; it tends to make them hypochondriacal and fanciful about this or that article of food not suiting them; moreover, they are often disposed to eat too little, and the necessity for at least three good meals a day should be impressed on them. If a little weak alcohol helps the appetite they should take it, but on general principles spirits should not be recommended. Light wine or light beer, or even stout, may be really beneficial, the last especially, from the large amount of dextrines and sugar it contains.

In atony and dilatation.—When there is a distinct motor defect fats should be taken very sparingly or not at all, and some care must be exercised to avoid the use of indigestible food, such as uncooked fruit and vegetables, pork and veal, cheese, pickles, and pastry. The object in view is to secure a chyme which shall be formed as quickly as possible and pass the pylorus easily, and the extent to which diet must be modified to effect this must depend upon the degree of dilatation present. But marked dilatation is always associated with more or less gastritis, which leads us to those cases in which inflammatory complications have to be considered.

In subacute and chronic gastritis we are guided by the same principle, with this additional rule for the more acute cases, that abstinence from food or from all but the simplest nourishment for a limited period is strongly indicated. When the stomach is irritated or inflamed we must carefully exclude all food which comes under the following headings: (1) pungent and acrid substances; (2) chemical irritants; (3) mechanical irritants; and (4) fermentable substances. Under the first heading are included condiments—such as pepper of all kinds, mustard, spices, and alcohol, especially ardent spirits. It is to be regretted that patients so often tell us that they have been recommended to drink spirits *because* they are suffering from dyspepsia. It should be better understood that gastritis in any degree contra-indicates

the use of spirits. Under the second heading are all strong acids, such as tannic acid in tea, and acetic acid in beer. Under the third heading of mechanical irritants are the insoluble, indigestible foods, fat meats, pork, oily fish, salmon, mackerel and eels, veal, mushrooms, cheese, pastry, fried articles, uncooked fruit and vegetables, seeds, husks, and skins. This rule excludes all bread but the finest white bread, and this should be well toasted, so as to ensure complete rupture of its starch capsules. No brown bread or whole-meal bread should be allowed. Lastly, we have such fermentable substances as sugar, farinaceous food and fat. We should forbid all sweets, all fats, but a very small allowance of butter, and all farinaceous food except toast and light vegetables. This dietary is not so restricted as it may appear to be; for example, it permits for breakfast—milk tea, *café au lait*, cocoa, toast, a little butter, white fish, fowl, game, beef and mutton, boiled, roast, or broiled, hot or cold, eggs lightly cooked, and potted meats unspiced. For luncheon—white fish, fowl, game, beef and mutton, boiled, roast, or broiled; mashed potato, cauliflower, broccoli, vegetable marrow, early peas; custard pudding, jelly, isinglass, blancmange unsweetened or with little sugar; claret or hock with aerated mineral water. For tea—milk tea, toast, German rusks. For dinner—no soup; any fish but salmon, mackerel, and eels; beef or mutton; sweetbreads, calves' head or feet, cowheel, tripe; all light vegetables; fowl or game; well-stewed fruit free from stones, skins, or fibres; custard, jelly; toast or rusk; cream cheese; claret or hock with aerated mineral water. All uncooked food and all that is acrid, pungent, sour, sweet, and greasy should be carefully avoided In the treatment of a case of subacute gastritis which will only require care for two or three days it is better to tell your patient exactly what to eat; but where the disease is more chronic it is better to tell her what things to avoid.

Exercise.—The muscular system depends for its health on regular exercise, and this process not only keeps the muscles in tone, but promotes the circulation and respiration and the glandular functions of the body. It is probable that large muscles demand more active exertion than small ones, and that spare bodies are benefited as much by rest as fat ones are by exercise. The importance of rest in these cases has already been explained, and where exercise is productive of fatigue it must be discouraged, or at least restricted to limits within which the patient will not feel tired. Exercise should be taken early in the day, and may with advantage be avoided later.

Electricity.—In atony and dilatation of the stomach we may apply either current to stimulate the action of the muscular wall and to restore its tone. This may be done through the abdominal wall by applying large, well-wetted, flat electrodes over the region of the stomach, but much more certainly by means of Max Einhorn's stomach electrode. The stomach is filled moderately with water and the electrode introduced in the same fashion as a stomach-tube, while a large, flat electrode is applied to the epigastrium. We can then connect them with either current, but our plan has been to use four or five cells of a constant current, which is interrupted every five or ten seconds. In the early stages this treatment obviously has a much better chance of success than in the more advanced cases, in which we have generally used it. It is not difficult of application, but its value is still in doubt.

Stomach-tube.—The modern soft stomach-tube is an instrument which serves the double purpose of filling and emptying the stomach. In some cases of anorexia, complicated by hysteria, it is often necessary to threaten to feed by the tube, but very rarely have we had to carry out the threat. It may be used to wash out the stomach when there is reason to believe that there is retention of stomach contents, and its use becomes imperative when there is decided dilatation. To a considerable extent we may get the same results from emetics as from the tube, and with less alarm to the patient, for although they soon get used to the instrument and pass it readily for themselves it is always distressing at first. Therefore in cases of recent trouble, where the stomach would probably need to be washed out once only, I prefer, rather than the tube, an emetic of zinc sulphate, given together with plenty of warm water. There is reason to believe that this instrument is used too little in this country and too much in Germany. The best antiseptic for washing out the stomach is a 1 per cent. solution of salicylate of soda.

Drugs.—Iron: On account of the prevalence of anæmia in these cases iron takes a very prominent place in their treatment. Where this symptom is marked we may give pil. ferri (Blaud's pill), sulphate of iron in mixture, so often usefully combined with sulphate of magnesium, or the tincture of the perchloride of iron. Strychnine: This drug is extremely useful in combating the motor weakness of the stomach and intestine, and may be suitably combined with iron, or in those cases where iron is not indicated with a mineral acid, of which hydrochloric acid seems the most appropriate. A mixture in which these two drugs formed the essential elements is very beneficial to the ordinary type of atonic gastralgia. Magnesium and sodium sulphates: These admirable aperients deserve early mention among the drugs which stand first in usefulness and in the frequency with which they are required. Constipation is the absolute rule in these cases, and of all aperients the salines are the best. When the patient is in bed the dose may be divided and given three times a day, but when she can get about it is better to give it the first thing in the morning on rising from bed. I think there is little to choose between the magnesium and sodium salt, except in their taste, of which probably to most people the former is more disagreeable. Either may be given in the shape of mineral water, of which Franz-Josef, Æsculap, Friedrichshall, and Hunyadi are among the best-known magnesium waters, and Carlsbad, Kissingen, and Rubinat the sodium waters. The last is, in my experience, one of the least disagreeable and most efficient. Where there is gastritis these salts or waters should always be taken in half a pint of water as hot as it can be sipped. Mercury: Abernethy said he would define biliousness as a condition curable by blue pill, and there should be no doubt of the value of this remedy in all cases of subacute gastritis. The drug may be given in the form of calomel or blue pill. I prefer the latter, and I generally give two five-grain pills, one to be taken at bed-time on successive or alternate nights according to the extent of its action. It unquestionably has the power of allaying gastritis, and in small continued doses is useful in the chronic form as well. How it acts—whether as an antiseptic or by unloading the vessels, or by both means combined—we cannot be sure, but its power in both these directions is indisputable, and no one will question the good results which follow its administration. Bismuth: In the treatment of gastritis, whenever there is evidence of much irritation by pain, furred tongue, icterus, or mucous vomiting &c., bismuth is indicated. Hydrochloric acid: We have seen that not very uncommonly there is distinct deficiency in the hydrochloric acid of the gastric juice; it is difficult to give as much as is needed to compensate for defective secretion, but fifteen drops in a wineglassful of water may be taken through a tube every hour for four hours after each meal. Pepsin: Pepsin is much more rarely absent, as so little of the ferment is actually necessary, but when artificial digestion has determined the want of it, it may be very easily supplied by any of the good preparations now in the market. In connexion with the use of these remedies it may be said that they do not do so much good as might be expected, nor does their absence produce the ill-effects we should anticipate; in fact, so long as the food is not retained too long in the stomach its chemical condition is of comparatively little importance, the deficient digestion in the stomach being made up by the activity of the pancreatic and intestinal juices.

Let me thank you, Gentlemen, for your kindness in attending and patience in listening to these lectures. It is a great honour and privilege to have had the opportunity of addressing you. My discourse has fallen very far short of my own estimate of what the occasion demanded; but in simple form and brief compass I have given you the results of a clinical study which has extended over many years.

THE VALUE OF VACCINATION.—A striking illustration of the value of vaccination, says *The Times*, is afforded by the recent experience of the nurses at the Birmingham Workhouse and the workhouse infirmary. These institutions are contiguous to the city small-pox hospital, and on the occurrence of the recent outbreak the guardians deemed it advisable to have the nurses vaccinated. Two of the nurses refused to submit to the operation, one of whom caught the disease and died about two months ago, and the other, who was also seized, died on Saturday last. None of the nurses who were vaccinated have been affected.

SOME ADVANCES IN GENERAL AND PREVENTIVE MEDICINE DUE TO COMPARATIVE PATHOLOGY.[1]

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COMPARATIVE PATHOLOGY is the youngest branch of medical science, but it is growing in importance rapidly year by year. The field of work in this subject is very large, including as it does the study of all communicable diseases, be they brought about by animal or vegetable parasites, which attack both man and the lower animals. The study of the characteristics and life history of animal and vegetable parasites is itself very important, and when there are added to this the effects which they produce, not only in the different organs of men but also of many other animals, effects which are commonly known as disease, it can readily be seen how large the subject may become. With the study of comparative pathology the name of Dr. G. Y. Heath, the late Professor of Surgery in the University of Durham, will always be associated, for he took a great interest in all branches of it and provided for the permanent teaching of this subject in the University of Durham by endowing a chair of Comparative Pathology. The growing importance of this subject is still further shown by the steps recently taken by the General Medical Council to provide that all those who present themselves for examinations for degrees in hygiene or diplomas in public health, shall have an adequate and practical knowledge of "bacteriology and the diseases of animals transmissible to man." In this country, unfortunately, the public are slow to recognise the immense value of preventive medicine to the community at large, and the great importance of having for medical officers of health men who have had a special training for that branch of medicine, and who, by the provision of sufficiently large salaries, would be enabled to devote their whole time to the work. We are, however, moving in the right direction, and even now a candidate has little chance of obtaining a post of importance in the public health service unless he holds a degree in hygiene or a diploma of public health. It is not my intention to point out the immense strides which the science and art of surgery have made by the practical application of facts which were, in the first place, revealed by the study of bacteriology, for the great saving of life and diminution of suffering which have been effected by the introduction of antiseptic and aseptic surgery by Sir Joseph Lister are so well known that I need only mention them. This alone shows how important the study of bacteriology is to the surgeon who would successfully apply the principles of antiseptic surgery to his practice. In learning how to make and keep a test-tube full of nutrient medium sterile, you learn much that will aid you in excluding bacteria from wounds and destroying those which have gained access to them. The methods of accomplishing these two great objects of antiseptic surgery are, of course, many in number, and in deciding which you will use in any given case, you will be guided by your knowledge of the principles which underlie them. It is clear that in all diseases which are caused by an animal or vegetable parasite we have, at the outset, two sets of factors to consider. There are, on the one hand, the circumstances which affect the condition of the parasite; on the other, those which affect the condition of the person who is attacked. For the production of the disease the parasite must gain an entrance into the body in the first instance, and must be able to grow or multiply in it. In such diseases we call the parasites which are able to invade the body the "exciting cause," and any influences which render the tissues more suitable for their growth "predisposing causes." It is evident that, however strong the predisposing causes may be, as long as the exciting cause is absent the disease will not develop. Thus, however strongly predisposed to phthisis a man may be, no phthisis can develop in him until the tubercle bacilli have gained access to his lungs, for we have no reason to believe that a tubercle bacillus can be spontaneously generated. In dealing with this class of disease it is of the greatest importance to have a clear conception of the relationship of predisposing to exciting causes, for the importance of the former has sometimes been unduly magnified, while that of the latter has been underrated. When once infection has taken place, the course which the disease takes is influenced both by the virulence of the invading microbe and by the resisting power of the person who is attacked. Thus physicians are always striving to find more efficient means of directly attacking the invading microbe, on the one hand, and of increasing the natural resistance of the patient, on the other. We are provided with various means of resisting the invasion of pathogenic bacteria, one of the most important of which is inflammation. Around the point of inoculation there may be a zone of inflammation; the phagocytes which are present attack and destroy the bacteria, being aided by the plasma, which acts as a poison to them. Thus there is a struggle between the invading microbe on the one side and the defensive cells and plasma on the other, which continues until either the microbes are destroyed and recovery takes place or the bacteria succeed in gaining a footing and the infection becomes generalised. In some cases the course of events may be rapid, in others it is slow. For example, a man who has a scratch on his arm, in lifting a hide which has come from an animal which has died of anthrax, is inoculated with the spores of the anthrax bacillus. A malignant pustule is the result. If the nature of the disease is recognised early, and if the bacilli are destroyed by cauterising the seat of inoculation and their spread into the surrounding parts is prevented by hypodermic injections of carbolic acid, recovery will take place. If energetic local treatment is not undertaken early the bacilli get into the blood stream and the disease becomes generalised. If tubercle bacilli gain an entrance into the lungs several different results may follow. If the man is healthy and not predisposed naturally to tuberculous infection the bacilli may be destroyed and no disease follows. The bacilli may gain a footing at first and multiply in the apex of one lung. The inflammatory reaction leads to a localised consolidation of the lung. At this point, in a favourable case, the disease becomes arrested, and the bacilli cease to invade fresh tissue and may be destroyed altogether. The patient regains his health, and when he dies many years afterwards a fibrous nodule in the apex of the lung is all that remains to mark the site of a battle upon the issue of which his life at one time depended. That this happy result is by no means rare is shown by the frequency with which the scars of the wounds inflicted by the tubercle bacillus are found in the lungs of those who have afterwards succumbed to some other disease. Only too often the bacilli encroach further and further into the lung tissue and the patient dies from phthisis.

It is important to have a clear conception of the *modus operandi* of parasites in the production of disease, as an intimate knowledge of the pathology of the process is a guide to rational lines of treatment. Many of the animal parasites produce symptoms in a mechanical manner. Thus the symptoms produced by hydatid disease in any part of the body are due to the mechanical pressure exercised on the surrounding tissues by the growing cyst. The bilharzia hæmatobia, which lives in the venous system and especially in the veins of the urinary organs, causes hæmaturia by damaging the wall of the veins and so allowing the blood to escape. In microbic diseases the effects are for the most part due to the poisons or toxines which are formed in the body by the action of the bacteria on the fluids and tissues with which they come in contact. In cases of general infection, such as anthrax, the blood contains both bacteria and their toxines; in other cases the bacteria only grow at one spot, as in diphtheria or tetanus, while the toxines which produce the constitutional symptoms are carried to all parts of the body by the general blood stream. These glimpses at the inner working of disease serve to interest us more deeply in our work and save us from drifting into that dangerous condition of empiricism in which treatment is confined to the application of remedies to relieve separate symptoms as they arise, while the general processes of the disease are overlooked, a condition which is fatal to the proper development of the *mens medica*. When we have ascertained that the illness of a patient is due to a known parasite or microbe several special lines of treatment are open to us. We can attempt to remove the parasite from the body altogether or to kill it *in situ* if it cannot be removed. If this is not possible, we can direct our attention to altering

[1] A Presidential Address delivered before the members of the University of Durham Medical Society.

the condition of the patient and his tissues, so that they become an unsuitable soil for the growth of the invader, or we can use means to counteract the harm which is done by the presence of parasites and their secretions in the body. In the case of disease caused by animal parasites the first line of action can frequently be taken, for many of these parasites are large in size, few in number, and easily got at. An ascaris lumbricoides is without difficulty killed by a dose of santonin and removed by a dose of castor-oil from the intestine. The hydatid cyst of the tænia cænurus, which so often develops in the brain of a sheep, can be readily removed by boring a hole through the sheep's skull, allowing the fluid to escape, and then drawing out the cyst wall by means of a notched quill, an operation which is frequently performed with success by shepherds in Northumberland. It is an interesting fact that, even in the reign of Henry VIII., instruments were made for this early advance in cerebral surgery. In diseases which are caused by bacteria the destruction of these latter is a much more difficult matter, owing to their small size, enormous numbers, and rapid multiplication. When the disease is localised in a situation which can be easily reached, the bacteria can often be removed or destroyed. A superficial abscess can be opened, and with the pus a large number of the suppuration organisms are got rid of, while others can be killed by the use of an antiseptic lotion, and healing takes place rapidly. When tubercle bacilli are confined to a joint or to a group of superficial lymphatic glands they can be got rid of by removing the diseased tissue by surgical measures. We never know when tubercle bacilli in such situations may enter the blood stream in sufficient numbers to set up general tuberculosis, so that it is well to remove them from the body as early as possible. When once pathogenic bacteria have settled in a deep-seated organ it is a much more serious matter, and our difficulties in treatment are greatly increased. At present, the agents which we know will kill the bacteria cannot be applied efficiently without injuring the patient also; in ague, however, we do possess a remedy—viz., quinine—which kills the hæmatozoa, which are the cause of that disease, without injury to the patient.

The action of this drug on these parasites can be observed under the microscope. If a drop of solution of sulphate of quinine is added to a drop of blood from a case of ague, containing the living hæmatozoa, in a short time the movements of the flagella cease and the parasites are dead. In some cases of bacterial disease such a specific remedy as this, which would act on the bacteria alone, would not be sufficient to cure the disease. Bacteria secrete poisons, and in a case of diphtheria it is quite possible that when we first see the patient he may have already absorbed a fatal dose of the chemical poisons, so that, even if all the bacilli in the membrane could be destroyed at once, he would still be killed by the toxines. For the successful treatment of such a case it is evident that we require something more than an agent to kill the living bacilli; we must, in fact, possess an antidote to the chemical poisons as well. The same holds good with regard to traumatic tetanus. Very often even the removal of a limb with the wound in which the tetanus bacilli are present fails to save the patient, because at the time of the operation he has received a fatal dose of the tetanus toxines.

Having thus considered in a general manner some of the advances in our knowledge which we owe to comparative pathology we will take up some more detailed examples of these points so as to make the matter more clear to you by definite illustrations. Anthrax forms a striking example of the amount of knowledge which may be gained by the careful bacteriological investigation of a disease. It is communicable to man by inoculation and by inhalation of the germs. The disease is caused by a bacillus which is found in the blood in enormous numbers; it forms a very resistant spore when any of the blood escapes from the body and is exposed to the air. As hæmorrhages frequently occur in animals suffering from anthrax, the spores are spread over the grass and convey the disease to healthy animals who eat it afterwards. Pasteur has also shown that these spores may be brought by earthworms from a buried carcase to the surface of the ground. These discoveries have shown us that, in order to prevent the spread of the disease among animals, the affected animal should be isolated as soon as possible in a place which can be disinfected afterwards. The body should not be opened after death, so as to prevent the escape of blood and formation of spores; it should, if possible, be destroyed by heat or buried in sandy soil surrounded by lime to prevent the access of worms to it. By taking these precautions many attacks of anthrax have been cut short at the commencement. Further than this, Pasteur has placed in the hands of agriculturists a simple method of protective inoculation by means of which animals are rendered immune to the disease for at least a year. Now the importance of such preventive measures to us lies in the fact that nearly all cases of anthrax in man are contracted from the lower animals, so that all precautions which lessen the frequency of the disease among animals will also tend to make it a rarer disease in man. By far the most important disease with which we have to deal in comparative pathology is tuberculosis, and happily our knowledge of the nature of it, and the various ways in which it may be spread, has advanced very greatly during the last twelve years. The most important part of this work was done by Koch, who demonstrated the presence of the tubercle bacillus in all forms of tuberculosis, and proved its causal relationship to the disease. This discovery at once led to a scientific classification of all tuberculous diseases, and it was proved that apparently different processes were all the result of the same infective agent, the tubercle bacillus, and so were all forms of tuberculosis. We have yet much to learn about the accessory factors which influence the kind of tuberculous disease which develops. The primary seat of infection, the number and virulence of the invading bacilli, the degree of natural resistance of the patient, the state of nutrition of his tissues, and the nature of his surroundings may all play an important part in determining the particular form of tuberculosis which is developed when the bacilli gain access to the body. Tubercle bacilli generally develop locally at the beginning in the part of the body in which they have been first deposited. Thus, if the primary inoculation takes place through a wound in the skin a tuberculous wart or a patch of lupus may be the result. A good example of this is the case of a medical student who was engaged in examining sputum for tubercle bacilli. He had an irritable scalp wound at the time, which he frequently scratched with his fingers; the wound thus became infected with tubercle bacilli, and lupus developed there not long afterwards. If tubercle bacilli are mixed with a guinea-pig's food it develops tuberculosis of the intestine. This is an important fact to remember in the treatment of cases of phthisis, for tuberculous ulceration of the intestine is caused by swallowing expectoration containing tubercle bacilli, so that we should be careful to tell all our phthisical patients to avoid this danger. Tuberculosis is a common disease in cattle, and when a cow has tuberculous disease of the udder the milk is often found to contain large numbers of tubercle bacilli. Such milk, if taken unboiled, does no doubt not infrequently infect young children with abdominal tuberculosis, and is, of course, unfit for food. There is also experimental evidence to show that if a cow has an apparently healthy udder, but tuberculosis of some other part of the body, the milk may contain the bacilli; but opinions differ as to the amount of danger which arises from such cases. The question as to the danger from eating meat from tuberculous animals still requires further investigation. A Royal Commission has been examining these very questions and we must await the publication of the report for further information on this subject. Experiment has shown that tubercle bacilli in milk can be killed by boiling for a few minutes, or even by heating the milk to 85°C. for five minutes. If all milk the source of which we are not able to trace is boiled before it is used the danger is avoided. A greater source of danger than food infection is infection by the respiratory organs, the path by which the bacilli have entered in most cases of phthisis. It has been proved by experiment that if an animal is made to inhale air in which tubercle bacilli are floating the lungs become infected. The source of infection in man is in most cases the dried expectoration of patients suffering from phthisis, which often contains enormous numbers of tubercle bacilli, and if it dries crumbles into dust, which floats about in the air. The bacilli can retain their vitality for some time in this dried condition and if they are inhaled by any person who forms a suitable nidus for them he runs a risk of contracting phthisis. This drying of tuberculous sputum takes place if it is deposited on the floor or in a handkerchief. In this way a bedroom may easily become infected by a handkerchief which is pushed under the pillow for use during the night. The proof of all this lies in the discovery made by Cornet that tubercle bacilli are present in the dust of rooms which have been inhabited by persons suffering from phthisis. This discovery of the means by which phthisis is spread is one of the most important discoveries in preventive medicine of this century. Cholera and other epidemic diseases only visit us occasionally.

but tuberculosis is with us always, and is said to cause at least one seventh of the total number of deaths which occur annually in Europe. Reforms are unfortunately brought about slowly, and as yet the rational means of preventing the spread of phthisis are by no means adopted in this country to the extent they should be. The precautions which are really necessary are very simple. The main point is to prevent the drying of the expectoration before it has been disinfected or safely disposed of. This end is readily attained if patients make an absolute rule of always expectorating into a vessel containing water or some disinfectant or into a piece of paper which can be burned at once. It is well to remember that some tubercle bacilli must remain adherent to the lips of a phthisical patient after expectorating, so that all spoons and cups should be immersed in boiling water after use, and kissing should be avoided. If these precautions are taken and the patient sleeps alone he can still live with his people without danger to them. If he dies or changes his room it should be disinfected, and all sanitary authorities should be prepared to disinfect such infected rooms just as they do after cases of scarlet fever. In order that these precautions may be efficiently taken it would be a great advantage to have phthisis included among the diseases which have to be notified to the medical officers of health.

The discovery of the tubercle bacillus has rendered a most important service to general medicine in providing us with the means of making a certain diagnosis in many early cases of phthisis in which the symptoms and physical signs are not sufficiently well marked to justify us in giving a decided opinion. The examination of expectoration for tubercle bacilli is easily carried out, and in many cases does not take more than five minutes. It should be made a part of routine practice just as much as the examination of the urine for sugar and albumen. The discovery of the bacilli in the expectoration at once shows that the patient is suffering from phthisis. The great importance of this is obvious. It enables us to at once take precautions to prevent the spread of infection to others, and it enables us to adopt a decided line of treatment at an early stage of the disease, when it has the greatest opportunity of doing good. Asiatic cholera has a special interest for us at present, as it appeared in England during last autumn. Happily it only assumed a sporadic form. In cases of cholera the comma bacillus or spirillum as it is in its fully developed form is to be found; but it does not occur in other diseases. It can be cultivated in a pure condition for successive generations. On several occasions a true attack of cholera has been brought on in man by swallowing the bacilli. A striking instance occurred in Koch's laboratory a few years ago. A medical practitioner, who was working with cultures of the cholera bacillus at the time, was seized with symptoms of cholera. Some of his discharges were examined by Koch, who found that they contained the comma bacilli. As there was no other case of cholera in Germany at the time it is evident that the attack was brought on by swallowing some comma bacilli from neglect of the rules of the laboratory for proper disinfection of the hands. A similar case occurred last autumn in Berlin, and, as it happened, the serum of this practitioner's blood had been examined as to its power of conferring immunity to cholera upon a guinea-pig about a year previously. Six weeks after the illness, during which the bacilli had been found in his stools, the protective power of the serum was found to have been increased more than a thousand times, just as it is after many attacks of natural cholera. Thus we have strong evidence of the causal relationship of the bacillus to the disease. Acting on this conclusion we rely on the presence of the comma bacilli in the stools rather than on the symptoms of the case in making our diagnosis of a case of cholera. The symptoms of cholera are often indistinguishable from those of English cholera or some cases of poisoning, so that it is a great advance in medicine to have a definite test, just as we have for the presence of tuberculosis. During this autumn I was able to detect the presence of the comma bacillus in eight cases which had suspicious symptoms in Northumberland and Durham. Every precaution was taken in these cases, and, happily, the disease spread no further.

Among the diseases which attack both man and the lower animals none have excited more interest than those two infective processes which often manifest their presence by causing over-action of the motor nerve centres, and, in consequence, severe muscular spasms. I refer to tetanus and rabies. Tetanus has been clearly recognised as a definite disease for more than two thousand years, and we possess no better example of the brilliant powers of observation possessed by Hippocrates than his descriptions of cases of traumatic tetanus. Let me give you his description of one of his cases. "The captain of a large ship, who had the index finger and the bone of the right hand crushed by the anchor, was seized with inflammation, sphacelus, and fever. He was moderately purged on the fifth day, the heat and the pain diminished, and a small portion of the finger separated. After the seventh day a passable fluid was discharged; he complained of his tongue, saying that he was not able to articulate properly; the prognosis was opisthotonos. The jaws were firmly clenched; then the neck was attacked; the third day the whole body was contracted backwards and sweated. The sixth day after the prognosis he died." Experimental research has now shown us that it is a traumatic infective disease caused by a specific bacillus. These bacilli, or their spores, are found in garden earth, in the mud in streets, in horse dung, and in other situations. They require certain conditions, such as the exclusion of oxygen and a suitable nutrient medium and temperature for their growth. When such conditions are realised, as, for instance, in a contused wound, they find a suitable nidus in the damaged tissues, which provide a suitable nutrient medium at the right temperature. Here they are shielded from the oxygen of the air by a layer of pus, and from the oxygen of the blood by a layer of damaged tissues, in which the blood flow has been arrested. They do not spread into the circulation, but the poisons which are produced by the bacilli enter the blood stream and act on the nerve centres, setting up the violent muscular spasms which are so characteristic of this disease. Here we have to deal with a local infection and a general intoxication. Infection thus implies the presence of a living poison, intoxication of a chemical poison. Experimental research has found a means of treatment for tetanus which bids fair to be a great success. It has been found that by a special method it is possible to confer immunity against tetanus. From the blood of animals thus prepared a substance can be separated which apparently acts as a direct antidote to the toxines which are present in the blood during an attack of tetanus. This has already been used successfully in a considerable number of cases. In this disease, then, within a few years experimental research has been able to reveal the causation and true pathology and to provide a cure, whereas during the preceding 2000 years our real knowledge of its nature had scarcely advanced at all. In the case of rabies the incubation period is sufficiently long to allow time for a course of preventive inoculations to make the patient refractory to the disease before it has time to develop the symptoms. Now, in spite of all that has been said against Pasteur's treatment for rabies, the fact remains that by its means the mortality of persons who have been bitten by animals which were really suffering from rabies has been reduced from 15 per cent. to less than 1 per cent. In five years 7925 such persons were treated in Paris alone, and only 73 died. At the lowest computation 12 per cent., or 951, would have died without the treatment. Thus more than 800 persons were saved from a terrible death in the course of five years. Do we know of any treatment for an acute infective disease, otherwise inevitably fatal, which can show results to compare with these? We have a very simple means of preventing the spread of this disease, for the bite is generally inflicted by a dog, though cats, horses, foxes and wolves may also be sources of infection. The muzzling of all dogs and the destruction of all stray dogs, combined with proper regulations to prevent the importation of the disease from other countries, have succeeded in stamping out the disease in Scandinavia and in greatly diminishing it in Germany. In Australia rabies is unknown, and so far strict regulations as to the importation of dogs have succeeded in keeping it out of that continent altogether. In Great Britain we are very favourably placed for getting rid of the disease and keeping free from it afterwards. Unfortunately no government has as yet undertaken the necessary steps, so that we still have it with us. In 1885 no less than twenty-seven persons died from rabies in London alone. Something certainly has been done by the application of proper regulations in some districts to diminish the frequency of the disease, but to really get rid of the disease they must be applied simultaneously all over the country. Other illustrations of my subject might be given from typhoid fever, diphtheria and other diseases, but I trust that those which I have selected will serve to show that the sciences of medicine and hygiene are receiving constant additions from careful

experimental research, which at the present time is going on more actively than ever. The future is full of promise, and we shall, year by year, acquire more rational and efficient means for the prevention and treatment of disease.

TWO CASES OF OPERATION FOR PERFORATED ULCER OF THE STOMACH.

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IN all new operative procedures it is eminently desirable that every case should be recorded, those cases which have failed as well as those which have been successful. Had this practice been loyally obeyed it is highly probable that the correct estimate of not a few operations would have been arrived at sooner and with the avoidance of much suffering. I desire, therefore, to publish two cases in which the attempt was unsuccessfully made to close perforated ulcers of the stomach, and for the guidance of others to point out the difficulties which beset the operation, that we may either learn how to avoid them in future cases or frankly recognise that they offer an insuperable bar to success.

CASE 1.—On May 27th, 1893, I was desired by my colleague Dr. Lees to see with him a young woman twenty-five years of age who had been admitted to St. Mary's Hospital on the 26th. She had been subject to indigestion for several years, had often been sick, and had once brought up stuff described as having the appearance of coffee-grounds. On the evening of May 25th she was suddenly seized with sharp pain, after having sneezed, in the left hypochondrium, at a point immediately below the false ribs, a couple of inches from the middle line. From that moment she was quite unable to work and the pain gradually spread over to the right side of the abdomen. When admitted to the hospital her temperature was 100·5° F., and the pulse and respiration were 124 and 44 respectively. Dr. Lees saw her on the 27th at midday, and then he noted that her pulse was 156 and of a running character, that she complained of pain all over the upper part of the abdomen, and that there was marked dyspnœa. The abdomen was motionless in breathing, tender all over, and, except slightly in the left flank, everywhere distinctly resonant. The temperature was not higher than before. Having come to the conclusion that a stomach ulcer had probably become perforated, he asked me to see her with a view to operation. His diagnosis appeared to me practically certain, for the fact of resonance over the hepatic area conclusively indicated that there was air in the peritoneal cavity. The patient was accordingly prepared at once for operation. I opened the abdomen in the middle line above the umbilicus and gave immediate vent to a rush of flatus. This was followed by the welling of a large quantity of thin, brown fluid. As much as possible of it was mopped up with sponges, and with sponges the peritoneal cavity was protected from further extravasation. I then explored the surface of the stomach and soon alighted upon the hole, which was large enough to admit the tip of the forefinger. It was on the anterior surface, exactly below the spot which she had pointed to as the seat of pain when she was first seen. Fluid of the same character as that already observed flowed freely from the opening and was directed outside the abdomen. When the flow had ceased the perforation was noticed to be surrounded with thick flakes of lymph. Some of this was removed, and I then scraped the margin of the ulcer with a Volkmann spoon and closed it by a continuous suture passed through the coats. By means of seven Lembert sutures passed into the muscular coat the portion of stomach which held the perforation was next enfolded so that peritoneum came to lie in apposition with peritoneum. A good deal more lymph of a nasty yellowish-grey colour having been peeled from the stomach, and sponged out from the region between the stomach and the diaphragm, the general cavity of the peritoneum was cleansed with hot boracic solution. The abdominal wound was closed in the usual way by tiers of sutures. The patient soon rallied and for twenty-four hours was decidedly easier, but on the following afternoon the temperature, pulse, and respiration all began to rise and she rapidly became worse. She died thirty-four hours after the operation and seventy-nine after the perforation had occurred. From the notes of the necropsy by Mr. Clarke we learn as follows: "The anterior wall of the stomach was united rather firmly to the left lobe of the liver by recent lymph, and less firmly to the abdominal wall, The sutures in the stomach were hidden from view by lymph. On injecting fluid into the stomach under considerable pressure not the slightest leakage was found at the site of the ulcer, and the sutures seemed to be completely satisfactory. The ulcer was on the anterior wall two inches below the lesser curvature and about midway between the cardiac and pyloric ends. It was situated amongst thick inflammatory tissue which would have made it impracticable to excise the adjoining parts of the stomach wall. There was a thin coating of yellowish lymph on the surface of the left lobe of the liver, but the intestines themselves were shining and free from lymph." The only remark I have to make about this case is that after the operation was over I felt that the work of passing the sutures would in all probability have been less difficult had the abdomen been opened below the ribs, over the site of the first pain, instead of in the middle line, and I resolved that in any future case I would open there, should the complaint of pain be as precise as in this instance.[1] It was satisfactory, however, to learn at the post-mortem examination that the suturing had been so far successful as to prevent further leaking from the stomach, but the condition of the walls at the seat of suture makes me feel considerable doubt as to the possibility of the closure being permanent had the girl lived, Her death was clearly due to the general peritoneal infection, and it seemed to us all that had the opportunity only arisen of operating at an earlier period there might have been a chance of saving her life. I hoped that my next case would be more fortunate in this respect, and that the invasion of the peritoneal cavity might not have gone so far. The second case appeared in every way more favourable, but it will be seen that insuperable difficulties impeded the work of suture and rendered success impossible.

CASE 2.—A girl sixteen years of age was admitted to St. Mary's Hospital on the afternoon of Oct. 21st, 1893. She had been suddenly seized only a few minutes before with acute pain in the left hypochondrium. Up to this time she had no idea that the pain which she had suffered for three months after food was due to anything more serious than indigestion. She gave a somewhat uncertain account of having once vomited blood, but she had not been under medical care. She turned faint at the moment she was seized with pain, but soon rallied, and a medical man who happened to be near at hand when she was taken ill despatched her at once to the hospital. When she arrived she was without pain or other sign of distress, and the only noticeable thing was her extreme anæmia. On the following morning her abdomen was distended and her temperature had gone up to 100°F. At 1 P.M. it had risen to 102°, and her pulse had become much more frequent, but she was not in any great pain. Dr. Sidney Phillips saw her at this time, and found the abdominal movements distinctly impaired, decided tenderness under the left ribs, and a tympanitic percussion note both here and in the epigastric region. He came to the conclusion that there had in all probability been a perforation of the stomach and suggested that a surgeon should be sent for. I saw her accordingly at 3 P.M., and her history and general condition, which seemed to me then extremely grave, led me to the same conclusion, and I advised immediate exploration. Preparations having been made as soon as possible, I opened the abdomen by a three-inch incision, two inches to the left of the middle line immediately over the point where she had been seized with pain and where there was now the greatest tenderness. Flatus escaped directly, and from the neighbourhood of the stomach large quantities of thin green sour-smelling fluid. It was obvious that this fluid was confined to the epigastric and hypochondriac regions, but if there were any adhesions they were so delicate as to break down with the least touch, and it was needful to protect the general peritoneal cavity by arrangement of sponges. Exploration with the finger soon led to the discovery of the orifice in the stomach, at a point on the anterior surface close to the lesser curvature and not more than two and a half or three inches from the cardiac end. It was almost out of reach, and it was necessary to prolong the abdominal incision, both upwards and downwards, in the upward

[1] To do so, however, would be in opposition to the experience of Dr. Mackenzie who points out in his paper "On the Association of Sensory Disorders and Visceral Disease" (Brain, vol. lxiii), that site of ulcer and surface pain do not correspond in position.

direction as high as the ribs. Even then the hole was well-nigh inaccessible, and traction on the stomach had but small influence in bringing it nearer. Anything like paring the edges or drawing the orifice up to the abdominal wall was out of the question. Throughout these various manœuvres the green liquid continued to flow in an almost endless stream, and caused much inconvenience. Presently it ceased, and with a curved needle in a long holder I then passed a single suture through the margins of the hole, so as in some measure to close it, and afterwards a series of six Lembert sutures, to enfold this portion of the stomach wall and bring the peritoneal surfaces into apposition. This was a matter of exceeding difficulty, not only by reason of the distance of the orifice, but also from the tendency of the thick and inflamed stomach wall to unfold itself, whereby some of the sutures immediately cut their way through. The work, however, was ultimately achieved, but not without great misgiving as to the stability of the sutures. The peritoneum was then flushed and sponged, and the wound was closed in the usual way. The girl had borne the operation well, and was perfectly warm when she left the table. For a few hours afterwards she was decidely easier, but about midnight she began to fail, vomited the same kind of fluid as had been seen at the operation, and had increased pain. She died fourteen hours after it. I felt little doubt we should find that the sutures had yielded, and that fluid had again been extravasated into the peritoneal cavity. From the notes of the necropsy made by Mr. Clarke we learn that "the body was that of a very anæmic girl. On opening the abdominal cavity and lifting up the left lobe of the liver a line of stitches was seen on the anterior aspect of the stomach, close to the cardiac orifice and parallel to, and about three-quarters of an inch from, the lesser curvature. The perforation in the stomach was close to the cardiac orifice, was far back, overlapped by the liver, and high up behind the costal margin. Although it appeared to be closed by the sutures, there was some greenish fluid between the stomach and the liver, and the general impression was that leakage had occurred. The ulcer measured one inch by half an inch, and the perforation was half this size. The bottom of the ulcer was thin and brittle, while the tissues of the stomach wall immediately around the ulcer were thickened, inflexible, and very brittle. Except in the neighbourhood of the upper part of the stomach there was no peritonitis." Enough has been said, I think, to show that perfect closure of the ulcer in this instance by suture was practically impossible. First of all, it was almost out of reach; and, secondly, the stomach walls themselves were in such a condition that no suture could have held; nor by any possibility could the part of the stomach containing the hole have been brought up to the abdominal wall and there fixed so as to exclude the peritoneum from further contamination. I tried to draw it forward, but its natural attachments absolutely prevented it; and if one had searched for some neighbouring structure with which to close the orifice the only part available was the under surface of the diaphragm, and that has only to be named to show at once how impracticable this proposal must have been. By reason of the remoteness of the perforation from the abdominal surface any and every manipulation must have necessarily been as difficult as possible, but it has occurred to me that it might perhaps have been feasible to fix a rubber tube into the orifice, to draw up and suture the stomach wall around it, then to bring the stomach as near the abdominal wall as possible, and to that in turn secure the tube, much in the same way as Witzel[2] performs gastrostomy. It is thus conceivable that the area including the ulcer might have been presently united by adhesions to the abdominal wall and adjoining portion of the liver, and that so the seat of the ulcer might have become practically extra-peritoneal. That method failing, I fear it must be acknowledged that as far as closure of the ulcer is concerned we must be prepared to meet with cases which are beyond surgical aid, even though the opportunity has arisen of operating early and before the general peritoneum has been extensively invaded. I await, however, with much interest the successful case to be brought before the Royal Medical and Chirurgical Society by Mr. Morse to learn what difficulties he met and how he overcame them: whether he had to deal with an open ulcer and closed it by suture, or with an area of inflammation and extravasation encapsuled by adhesions, such as Mr. Barling[3] successfully treated in a recent case. It must not be forgotten that there is all the difference in the world between such conditions and those which my two cases presented, and that the chances of success must largely depend on the good fortune which attends the surgeon as to the lesions he may find and the time at which he has been called to operate. I purposely refrain from considering other important points in connexion with the operation—the propriety of entirely resecting the ulcer, of uniting it to the abdominal wall, of endeavouring to close it with transplanted omentum, of washing out the stomach either before or after it has been exposed—for these matters lie outside the scope of the paper and have not fallen within my own experience.

[2] See Annals of Surgery, vol. xviii., 1893, p. 641; also Edinburgh Medical Journal, February, 1894, on Gastrostomy after the Method of Witzel, by F. M. Caird.

ŒSOPHAGOTOMY AND GASTROTOMY FOR THE REMOVAL OF A DENTURE WITH FIVE ARTIFICIAL TEETH FROM THE ŒSOPHAGUS.

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IT would be interesting to know the percentage of persons above twenty-five years of age who possess false teeth. It is certain that amongst domestic servants and shop girls, in whom it is almost the rule to find decayed teeth, very many have artificial substitutes. These substitutes are frequently badly fitting and after a time become insecurely fixed. More particularly is this the case when the plate carries only one or two teeth and is small in size. Dr. Church[1] cites many interesting cases illustrative, amongst other things, of the risks attending the use of such plates.

I propose in this paper to give in detail the description of a case which illustrates one danger, and to supplement the account by remarks. A married woman aged twenty-eight with three children, the two youngest being twins aged six months, awoke on July 31st, 1893, with a sensation of something in the back of the throat. She tried to cough it up, but failed, and therefore tried to swallow it. In this, with the aid of several mouthfuls of water, she partially succeeded, and, having obtained comfort thereby, she bethought herself of what that something might be—viz., a plate with five teeth. She suffered considerable pain, and her husband called in a medical man, who sent her into the Royal Infirmary, Edinburgh. On her arrival at 2 A.M. the resident surgeon found her breathing quietly and suffering no pain. He examined her throat, but could see no foreign body, and gave directions that she should be watched for fear of difficulty in breathing. I saw her on the forenoon of the same day. Bearing in mind a well-known story redounding to the credit of the late Professor Spence, I first endeavoured to ascertain whether the plate was present or not. Both the patient and her husband were positive that the teeth had passed into her gullet and that they were still retained. She complained of slight pain opposite the manubrium sterni. No foreign body could be felt on palpation of the neck and no abnormal prominence was made out. She was able to swallow milk, but said that the effort gave rise to pain at the point mentioned above. I placed the patient on a chair and passed a large-sized olivary œsophageal bougie (No. 10) into the stomach, but failed to detect any foreign body and met with no resistance. This was done twice, and then a coin-catcher was tried, with a like result. The patient complained very much while these manœuvres were being carried out, she was therefore placed in the recumbent posture; chloroform was administered, and the olivary bougie was again introduced, when, although it passed readily into the stomach, a slight sensation of roughness was detected, not sufficient, however, to enable one to definitely say that a foreign body was present. The coin-catcher was, therefore, introduced, and after two or three endeavours to "catch on" to the plate if present it caught and could not be withdrawn by a moderate degree of force. Definite proof of the presence of the plate having been thus obtained the coin-catcher was kept in position and the exact position of the plate was

[3] Birmingham Medical Review, September, 1893.
[1] St. Bartholomew's Hospital Reports, 1883.

gauged as far as possible to be midway between the manubrium sterni and the stomach. Œsophagotomy was performed in the usual way, the opening into the œsophagus being made as low down as possible. No difficulty was met with in the operation. The coin-catcher was now withdrawn, a pair of dressing forceps were introduced through the œsophageal opening, and an attempt was made, but without success, to grasp the plate. Failure by this method being met with, a laparotomy to expose the stomach was performed; the incision was made in the middle line between the xipho-sternum and the umbilicus. The stomach at once presented in the wound and was drawn forward, the anterior surface at the cardiac end being brought well out. Sterilised muslin was now packed round it to prevent any of the contents, when the stomach was opened, from gaining access to the general peritoneal cavity. An incision at right angles to the greater curvature, sufficiently long to admit the forefinger, was made into the viscus; the finger was introduced, and a search was made for the œsophageal opening. Difficulty was encountered, however, in finding the opening, which anatomically is not only high up and very posterior in the diaphragm but is bound down by the crura of that muscle. With the knowledge that the size of the opening in the stomach was not so important as, firstly, the avoidance of foreign matter gaining entrance to the peritoneal cavity, and, secondly, delay in finishing the operation, I freely increased the size of the opening until it allowed my hand to enter the viscus. I had then no difficulty in finding the œsophageal opening, into which I passed my forefinger, when I detected the plate about an inch and a half from the orifice of the œsophagus. Along my finger I passed a pair of dressing forceps, grasped the plate, and by a gentle rotatory movement succeeded without difficulty in withdrawing it. The wound in the stomach was then stitched with fine silk by a modified Czerny-Lembert suture; the mucous membrane was brought together by a continuous suture, and the serous coat by the Lembert. The wound in the stomach when stretched to facilitate stitching was four inches long. The abdominal wound was closed in the ordinary way. The œsophageal wound was closed with fine catgut, and the superficial parts with interrupted sutures, a small piece of iodoform gauze being introduced for drainage. Dressings having been applied, the patient was put to bed. The whole procedure occupied rather less than two hours. I was indebted to my colleague, Mr. Alexis Thomson, for assistance at the operation.

After-history.—The patient did not suffer much from shock, and two hours after the operation the temperature was 98·6° F. She slept at intervals and said she was fairly comfortable. At 10 P.M., four hours after the completion of the operation, she was restless and at 11.15 P.M. she was given a ¼ gr. morphia suppository. At midnight the temperature was 100·4°, the pulse 84, and respiration 30. For forty-four hours after the operation nothing was given by the mouth, but nutrient enemata were given every four hours. For five days the enemata were retained and gave rise to no irritation. Partly to prevent rectal irritation and partly on account of general restlessness, morphia suppositories were introduced thrice daily. On the sixth day there was slight diarrhœa, which continued for a week notwithstanding that the enemata were immediately stopped. Forty-four hours after the operation the strip of gauze was removed from the œsophagotomy wound, which was healthy in appearance and showed no sign of saliva having escaped into it. A smaller, fresh piece of gauze was introduced, the wound having been powdered with iodoform. At this time also she was given two ounces of milk and barley-water by the mouth. She swallowed it readily; none escaped into the œsophagotomy wound, and it caused her no pain. After this she was fed with milk, cream, and barley-water every four hours. On Aug. 4th the œsophagotomy wound was dressed, and the patient was fed by the mouth, when it was noted that a little milk oozed from the œsophagus into the wound, indicating that the œsophageal stitches had in part given way, or, at any rate, that the wound was imperfectly closed. The important question now arose, What measures should be taken to feed the patient? Three procedures were possible: (1) to pass a tube by the mouth into the stomach; (2) to open up the wound in the œsophagus and introduce a tube through it into the stomach; and (3) to continue the method in use—viz., to allow the patient to swallow. The second of these plans was dismissed at once, as the superficial parts were nearly healed and the opening in the œsophagus was very minute. I dreaded to continue the third, as the milk &c. might pass into and between the deeper structures of the neck, and I accordingly had recourse to the first. The tube having been passed by the mouth, a pint and a half of custard was given. The patient complained bitterly of the discomfort of the tube; but for several days she was fed by this method three times in the twenty-four hours.

Aug. 5th.—The patient has passed a quiet night, but has not slept much. Both wounds were dressed. The abdominal wound has healed; the œsophagotomy wound looks healthy, there being no undermining.

8th.—She had a very bad night, with some delirium.

9th.—The patient had another bad night, wandering considerably. During the day she was very restless and talkative. Her attention can be fixed by questions, but she has delusions.

This condition continued for four days, and her strength, notwithstanding much nutritious food and some stimulant, gradually diminished. Diarrhœa had begun on the 6th and was not amenable to treatment.

14th.—The abdominal wound is healed, and there is no sign of peritonitis. The wound in the neck has opened out a little superficially, but there is no evidence of undermining, and very little fluid escapes from the œsophageal wound. The wound is dressed after each meal; it is first sponged out with weak carbolic lotion, then dusted with boric powder and plugged loosely with iodoform gauze. The patient now refused all food and resisted the introduction of the stomach tube, which had eventually to be forcibly introduced. She on this day seemed to be distinctly maniacal, and Dr. Affleck, who kindly saw her with me, agreed that she very probably suffered from lactation mania. She had previous to admission been nursing twins for six months. As her condition had been gradually becoming worse, and as the symptoms were so pronounced at this time, it was deemed advisable to have her removed to another ward. Fortunately, on the following day she distinctly improved, and from that date she progressed more and more favourably to recovery.

The œsophagotomy wound was completely cicatrised on Sept. 8th, and she was dismissed recovered on the 13th of that month.

Remarks.—With regard to the mania which manifested itself, no history of insanity was discovered. Iodoform had been used in very small quantities and was stopped at once when delirium occurred, boric powder being substituted. It seems most probable that the condition was due to a severe operation, followed by loss of strength from insufficient nourishment, in a patient already much worn out by nursing. Mania after operations on the abdomen is a recognised complication in a small number of cases.

The liability for foreign bodies to become fixed in the pharynx or œsophagus is widely recognised both by the profession and the public, and that their presence is fraught with immediate danger in some instances is also understood. Such foreign bodies vary greatly in their nature,[2] but, broadly, they can be divided into two great classes: (1) those which may with safety be pushed into the stomach when extraction by means of the fingers, forceps &c. has failed; and (2) those which cannot be thus safely forced into the stomach. The bodies which can be classified under these headings readily suggest themselves, but I propose to draw attention to the special form typified in the case which I have detailed. For æsthetic reasons, and in order to maintain health by efficient mastication, plates carrying artificial teeth are supplied in great numbers, and the desire for them is not restricted to the wealthier classes; unfortunately, however, poor persons are unable to obtain expensive plates and have recourse to inexpensive forms, which are frequently synonymous with defective and insecure plates. These plates, liable to break or badly fitting, soon become insecure, but the dread of further expense and ignorance of the danger incurred by their use prevent the individual from purchasing a new plate. A not unusual method of fixing the plate is to fix wires round neighbouring teeth, a method liable to the twofold danger that the wire may break or the tooth come out. The former occurred in the case quoted. From time to time in the journals or daily papers the accident of a plate of artificial teeth passing into the pharynx or œsophagus is reported (within the past week I have observed the report of two such fatal cases in the public prints), and many museums contain artificial plates which have been obtained by surgeons as a result of such accidents. Dr. W. S. Church[3] quotes several cases in which

[2] Poulet: Foreign Bodies in Surgery, vol. i., p. 71.
[3] St. Bartholomew's Hospital Reports, 1883.

such accidents have occurred, and since the date of his paper numerous cases have been noted.[4] The point at which the plate may become fixed in its downward progress to the stomach is variable and depends on various factors—e.g., size, shape, and irregularity of plate, and the axis at which it enters; but if it passes beyond the pharynx there are two points at which it is especially liable to be caught—viz., opposite the cricoid cartilage or immediately above the œsophageal opening into the stomach—these situations corresponding to the narrowest points of the œsophagus. The cardiac orifice of the œsophagus is firm and sphincter-like. When the finger is introduced into it from the stomach the finger is grasped, and resistance is offered to its introduction in a manner similar to that experienced on examination of the rectum. The resistance is readily overcome and does not appear to be present more than an inch above the orifice. When it is definitely ascertained that a foreign body has become impacted it is now universally recognised that without unnecessary delay an endeavour must be made to remove it, even when no symptoms such as pain, or dysphagia, or dyspnœa are present. Very numerous cases are cited by M. Poulet, Dr. Church, and others, of disastrous results when this has not been done, death resulting sometimes months afterwards from hæmorrhage, ulceration having occurred into large vessels. M. Poulet has collected thirty-three cases of death from hæmorrhage due to ulceration or perforation of vessels; in seventeen of these the aorta was the source of the bleeding; in other instances operative interference under unfavourable circumstances was necessitated several months after the accident. That abscess formation should occur in certain cases very rapidly is not to be wondered at when it is remembered how septic such plates must be and how readily septic infection occurs through the abraded surface of the œsophagus. The above remarks do not only refer to such irregular bodies as artificial plates, as any hard substance may cause ulceration. M. Poulet figures a specimen from the Dupuytren museum in which a five-franc piece had caused perforation of the œsophagus and aorta.

The treatment to be adopted for the removal of foreign bodies from the œsophagus varies in different cases, but probably in all an endeavour to extract with instruments should be attempted in the first place, and for this purpose various apparatus may be tried. If the body is in the gullet, first the finger and then forceps should be used; if beyond the reach of the former, forceps are necessary. When it is known that the body is round or at least regular in outline considerable force may be used to dislodge it; but if it be irregular or sharp very little force should be employed, as in all probability it has caught in the mucous membrane; its removal by force is accompanied by laceration and tearing of the œsophageal wall, and even then, perhaps, it catches immovably at a higher level. Similar care must be adopted in the use of the coin-catcher, &c. In preference to a continuance of such haphazard attempts at removal, the operation of œsophagotomy should be at once performed, the opening in the œsophagus being made directly over the body or as near it as possible. In this way the surgeon may be enabled to use his finger—it may be to loosen the hold of the foreign body in the œsophageal wall—or at least he can use shorter instruments to manipulate the object; and further, if the body be above the opening in the œsophagus, he can push it up or draw it down as seems most expedient for its removal. If, on the other hand, the body be below the opening, it has a much shorter distance to travel to the point of exit. The operation in itself is easy of execution in the majority of instances, and the mortality from it is small.[5] Thus Markoe, quoting from statistics supplied by Gross, states that in 82 cases there were 63 of recovery and 19 deaths. Of 16 deaths 8 were from abscess provoked by the lodgment of the foreign body, 2 from exhaustion, 2 from septicæmia, and 1 from pneumonia. The cause of death in the other 3 is not clearly stated. In these cases, however, it is not stated how long after the foreign body became impacted an operation was performed, or what previous endeavours had been used for its extraction. If some days had elapsed before the operation, or if injudicious attempts were made to remove the body, the risk of a fatal result was greatly increased.

When the foreign body is impacted above the level of the manubrium sterni it is known that by œsophagotomy the body can be reached, but when it is at a lower level it has to be decided whether it can be reached from above, and whether œsophagotomy or gastrotomy should be performed. Our decision is aided if we can gauge the position of the body by means of a probang or other instrument, and it is important, therefore, to recollect the exact distance from the teeth to the cardiac opening of the œsophagus. In the adult the distance varies, but fourteen and a half inches is the average.[6] The distance from the cricoid cartilage to the stomach is seven inches, and one can thus easily gauge the distance of the impacted body below the manubrium sterni or above the stomach. It is well to be careful that all instruments used to detect the presence of the body are marked in inches. If the body is found to be near the stomach the question arises, Should œsophagotomy or gastrotomy be performed? The decision must depend partly on the shape of the impacted object, partly on the patient who is to be treated, and partly on the facilities for operative measures. If the patient be one in whom either operation can be performed with equal facility, and if the armamentarium, in the widest sense, be complete for thorough asepsis, the chief desideratum is, I think, the character of the impacted object. If it is known to be rounded and that there are no sharp irregularities, œsophagotomy is indicated (*vide supra*), but if it be irregular, and if it is believed to have been partially withdrawn and then to have become fixed, I think that gastrotomy is undoubtedly preferable, as probably any endeavour to pull the body upwards causes further tearing of the soft parts, and perhaps even then failure to extract it, while its extraction downwards will be easier, as the sharp processes are most likely projecting upwards. If they had been pointing downwards the body would have become fixed at a higher level. The case which I have recounted shows that, if need be, the double operation may be performed at one time on the same patient. Dr. Richardson[7] has shown experimentally, on the cadaver, that the fingers can touch each other when introduced the one through the œsophageal wound and the other through the stomach. In gastrotomy the incision into the stomach must be of sufficient length to permit at least one finger to be introduced to search for the œsophageal opening. I had difficulty in finding the orifice of the œsophagus with one finger introduced and found it necessary to insert the whole hand, a proceeding which others have also found to be requisite.

A question of great importance, and one which is still debatable, is the best procedure to adopt in the after-treatment of the œsophagotomy wound. The difficulty is chiefly dependent upon the alimentation of the patient. I believe that, if possible, the edges of the œsophageal mucous membrane should be accurately brought together by silk sutures, and then the muscular coat accurately stitched, while the superficial parts should be left perfectly open and allowed to heal by granulation. My reasons for this view are that (1) the œsophagus may be so injured that healing by first intention may not occur; (2) swallowing of saliva is a necessity, while still greater strain may be applied to the wound by the act of vomiting; and (3) it may be necessary at a very early date to give gastric alimentation either through a tube passed into the stomach or by allowing the patient to swallow. Any one of these may cause the œsophageal sutures to give way and allow the escape of septic matters into the deeper parts of the neck, with the attendant risks. The want of success in œsophagostomy, as pointed out by Professor Chiene several years ago, is due to failure to provide for free drainage and for absence of tension. In the case under review, I believe that if I had adopted this method healing would have occurred sooner. The difficulty of rendering the parts aseptic is considerable, and to stitch the œsophagus accurately is by no means easy, more especially in a thick neck where the wound in the œsophagus is very deeply situated. These questions have been discussed by Dr. Markoe.[8]

Conclusions.—1. It is extremely dangerous to leave a foreign body in the œsophagus, as disastrous results almost invariably ensue. 2. Such disastrous results may not occur for some time after impaction. 3. If attempts at removal of the foreign body with instruments fail one should at once proceed to operative interference. 4. The operation of œsophagotomy is not *per se* dangerous. 5. If the body be impacted low down near the cardiac opening of the œsophagus, gastrotomy is preferable to œsophagotomy when the body is irregular. 6. By one or other of these operations all parts of

[4] Annals of Surgery, vol. iv.; Transactions of the Clinical Society, 1884; THE LANCET, Jan. 9th and 16th, 1886, and Nov. 5th, 1887, &c.
[5] Annals of Surgery, vol. iv., April, 1886.
[6] Professor M. H. Richardson: THE LANCET, Oct. 8th, 1887.
[7] Op. cit.
[8] Annals of Surgery, April, 1886.

the œsophagus are within reach. 7. The danger of operative procedure is mainly due to the difficulty of alimentation. 8. The superficial parts in the œsophagotomy wound should be left freely open so as to heal by granulation.

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CASE OF TYPHLITIS, WITH PERITYPHLITIC INFLAMMATION AND ABSCESS; OPERATION; RECOVERY.

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THE patient was a boy eleven and a half years of age, who had always enjoyed good health until June 18th, 1893, when his mother, thinking that he was suffering from biliousness, gave him a dose of castor oil, which acted well. He appeared to be going on satisfactorily until the evening of the following day, when he complained of sudden severe pain in the right iliac region, and the medical adviser, Mr. Davies of Newton Abbot, found him to be suffering from an attack of perityphlitis; his temperature was 102° F., his pulse was full and bounding, his tongue was furred, there were great pain and tenderness with some resistance to pressure over the right iliac region, and he lay with his legs drawn up. He was ordered fifteen minims of opiatine every four hours and hot fomentations containing tincture of opium over the abdomen were directed to be applied. No exciting cause of the attack could be discovered, but there was a marked history of phthisis, as his father's father, two brothers, and one sister died from that disease. From this date the boy gradually became weaker, and the resistance and tenderness over the right iliac region were increasing. He was given an enema on July 7th without result, and on the following day I saw him for the first time, as I had come down to act for Mr. Davies for a time; on examining the boy with him I thought the symptoms pointed to suppuration round the appendix. The tincture of opium was changed to solid opium (half a grain every six hours), and belladonna fomentations were used instead of the former ones; he was taking milk (a pint and a half) and champagne during the twenty-four hours. His abdomen was distended, and the tenderness was more acute over the region of the appendix, where the percussion note was dull; his tongue was glazed and dry. The temperature for the next three days varied from 101° to 102°. On July 12th the boy complained during the day of pain in the left leg, which was drawn up more than its fellow, and I found that the sigmoid flexure was somewhat distended, but as he was very sleepy when I saw him I decided to give him an injection the next day; however, at 3 A.M. that morning word was sent to me that he had two hours previously passed a very large quantity of hard, dryish, light-yellow fæces, which had caused him much pain in passing, and when I saw him at 9 A.M. his temperature was 104·8°. I immediately ordered twelve grains of sulphate of quinine; his evening temperature registered 102·2°. There was dulness on percussion over an area of about three inches in diameter, situated above the outer half of Poupart's ligament on the right side, where the pain was intense; the abdomen was less distended and much flatus was being passed. His tongue was very dry and cracked, sordes were on the lips, and he complained of intense thirst. His temperature from now to the date of operation averaged 102·2°. On July 14th I gave a copious enema of soap-and-water with olive oil, with very satisfactory results, large quantities of fæces, of the same character as before, though smaller in circumference, coming away. The pulse was 110 and very thready, small, and easily compressible. The region of greatest tenderness and resistance was circumscribed to an area about three inches in diameter, situated about two inches and a half below and two inches to the right of the umbilicus. However, the whole of the right side and lower part of the abdomen was rigid and painful. On July 18th the appearance of the boy seemed to point to suppuration in the right iliac region; his face was pinched and drawn and he complained of great headache, his pupils were widely dilated and sluggish in reacting, he complained of a "throbbing sensation" in the region of the appendix, his legs were well drawn up and abdominal respiration was absent, and he was sweating very profusely. Considering the bowels had acted so well; that there was still much distension; that the area of greatest resistance and tenderness, situated over the region last mentioned, though somewhat nearer the umbilicus—viz., two inches below and to the right of it—appeared to fluctuate, though this was difficult to ascertain positively owing to the great pain and tenderness caused by the least manipulation; and that around the umbilicus there was a thin halo of redness: considering these facts, I came to the conclusion that an examination under chloroform would help the diagnosis of suppuration, and consequently I consulted Dr. Scott and Mr. Margrave (both of Newton Abbot). On the following day (July 19th), under chloroform, fluctuation was easily felt, and I proceeded to operate. An incision two inches long was made from above downwards over the fluctuating spot and as much to the right of it as possible in order to escape the sheath of the rectus abdominis. Directly on passing through the abdominal wall the abscess cavity was entered, from which came twelve ounces and a half of most offensive yellowish-green thick pus. I enlarged the orifice into the abscess cavity by Hilton's method and subsequently by scissors. After most of the pus had been removed, on introducing my finger into the cavity, I found that the appendix was uniformly swollen and soft; it was about half an inch in diameter. No foreign body being detected I decided to leave it alone. A few adhesions were broken down, but these were of no consequence. Copious irrigation with a 1 in 40 carbolic solution and a 1 in 2000 perchloride of mercury solution was used and a double drainage-tube was inserted. Wood-wool tissue and cyanide gauze dressings were used. A quarter of a grain of morphia was given hypodermically after the operation. The patient was slightly sick in the evening. From this date he began to improve rapidly. The temperature regained the normal three days after the operation, and his pulse became regular about the same time. On discontinuing the opium on July 22nd his tongue commenced to improve, and the sordes disappeared about a week after the operation. I ordered two grains of sulphate of quinine three times a day. His bowels were regulated by enemata for the first two weeks, and by small doses of castor oil afterwards; the discharge was always quite sweet and free after the third day. The abscess cavity healed well, and the drainage-tube was left out three weeks after the operation; the wound closed in about four weeks and a half. He was allowed to be up on Aug. 12th, and his diet consisted of milk puddings, beef-tea, and food of a light description. During his illness the boy suffered from inflamed spots over the bony prominences of his back, which were greatly benefited by painting with a 5 per cent. solution of silver nitrate.

Remarks.—The case is interesting in many ways. 1. What was the cause of the attack? Was it tuberculous or was it an ordinary simple attack of a very acute form? I am inclined to take the latter view, as the onset and course of events were too rapid and the healing process too straightforward for a tuberculous lesion. 2. The rapid formation of the abscess. 3. The absence of any œdema or redness of the skin over the abscess cavity. 4. The incomplete obstruction. This, I think, was in part most probably due to the pressure of the abscess on the intestine in the right iliac region, as within four days after the operation the bowels acted well. 5. The absence of vomiting throughout the illness, except just after the operation. 6. The absence of rigors at any period.

Ramsgate.

A CASE OF TRIGEMINAL NEURALGIA OF MALARIAL ORIGIN.

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ON Dec. 23rd, 1883, I was consulted by a gentleman, a lieutenant in the Royal Navy, who was suffering from a severe attack of neuralgia affecting the left orbit, frontal region, and surrounding area of the face. The pain most complained of was that situated at the back of the eyeball. There were lacrymation, photophobia, and some slight iritis. On making inquiries into his previous history he volunteered the following information as regarded his previous health. He had always enjoyed very good health—the only illness that he had suffered from being acute rheumatism some years ago—until he joined the East Coast of Africa station. His duties whilst

there were chiefly in connexion with the navigation of the ship along the coast and piloting up the rivers when not stationed either at Pemba or Mombassa, both places having an evil reputation for the malarial nature of the climate. Whilst there he suffered from periodical attacks of severe neuralgia confined to the area described above, though much more severe, especially as regarded the photophobia and iritis. The attacks recurred regularly every fortnight, though occasionally three weeks would intervene, but this was rare. The attacks were always worst when he was stationed at Pemba. He stated that ague was not very prevalent in his ship, though three or four of the crew had been down with it. His attacks would last for twenty-four or forty-eight hours, rendering him totally unfit for duty, and to completely recover it always took one or two days more after the attack had ceased, as they left him so weak. Previously to joining the East Coast Squadron he had never been subject to any form of neuralgia. He was treated with antipyrin and other various nerve drugs, but derived no benefit. When the ship arrived at the headquarters of the squadron at Simon's Town he was informed that he was suffering from intractable neuralgia of the eye and was advised to come home to consult an ophthalmic surgeon on account of his eye. During the intervals of the neuralgia the patient was in no way troubled with his vision, the eye being quite equal to all tests applied, and no disease was to be made out by ophthalmoscopic examination. After leaving Simon's Town and joining the mail boat he was quite free from neuralgia until the morning of Dec. 23rd, when he consulted me. After thinking over his case and recollecting that malarial fever sometimes manifested itself in this manner, I treated him by giving him a large dose (15 grs.) of sulphate of quinine, with eight minims of liquor arsenicalis. This treatment gave him speedy relief, and he had no further trouble while on the ship.

My reasons for coming to the conclusion that this was a case of malarial fever are briefly stated as follows: (1) the periodicity of the attacks; (2) their regular recurrence; (3) the amount of prostration after the attack; and (4) that he was free from it when not stationed in a malarial district. The fact of his having had an attack after having left the malarial districts for three weeks goes in no way against the diagnosis, as it is a common occurrence for persons the subjects of ague to have an attack, even when they have been quite free from it for some considerable period, on becoming subject to a sudden change. This is especially the case where the change is from a warm climate into sudden cold, such as was experienced by the patient mentioned above, the difference in temperature between Dec. 20th and 22nd having been for him a fall of 20° F. Cold has often brought on attacks of ague in people travelling between South Africa and England unless averted by prophylactic treatment.

That malarial fever often exhibits itself in this form can easily be demonstrated in South Africa, where it is exceedingly common to find people suffering from orbital neuralgia who have been in the interior, where malaria is very prevalent, and who are only relieved by anti-malarial treatment. Their neuralgia is periodic and sometimes preceded by a definite cold stage. On looking over the literature of the subject I find that both my former teachers, Dr. Bristowe and Dr. Frederick Taylor of Guy's Hospital describe cases of so-called brow ague as belonging to the numerous anomalous manifestations of malarial fever. Their malarious nature may be recognised partly by their periodic character, by their occasional supervention on a more or less distinct cold stage, and by their occurrence in a malarious district, and partly by the fact that the patient has already been the subject of ague.

The scarcity of such cases in England has led me to think that the case above described might be of general interest and worthy of publication.

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DEATH UNDER NITROUS OXIDE GAS.[1]

BY JOHN ADAMS, F.R.C.S. ENG.

THE account of the death under nitrous oxide gas, noticed in THE LANCET of March 3rd and gathered from newspaper reports, gives an imperfect description of the case. I was therefore pleased to accept an invitation from the secretary of the Society of Anæsthetists to give a more detailed account before its members who have made anæsthetics a special study, with the hope that some further light might be thrown on the unusual result, from what proves in the vast majority of cases a perfectly safe anæsthetic. The patient came to the dentist on Monday, Feb. 21st, about 1.30 P.M., and had an hour previously partaken of a light lunch. After waiting half an hour, he was shown into the operating room on the first floor. He seemed in good health and wished to have a second right upper molar extracted whilst under gas. There was nothing tight about his neck, nor was there anything in his appearance to lead one to think he was not a fit subject for the anæsthetic. He had a small, receding jaw and a short, thick neck, but no abnormal swelling of any kind which prevented his closing his mouth, as reported in THE LANCET of the above date. An ordinary prop, attached to a strong fishing-line, was placed between the upper and lower central incisors. After taking three or four inspirations of nitrous oxide gas he took off the face-piece and said he felt nervous, but at his own request I proceeded to go on with the administration. His respiration was shallow but regular, and after taking about two thirds of the ordinary quantity of gas the tooth was extracted quickly and without any difficulty; the respirations at once became irregular and the patient became more cyanosed, his muscles rigid, and after three or four respirations he ceased to breathe, but no danger appeared imminent. Breathing not continuing, the prop was at once removed, the patient taken from the chair on to the floor, and artificial respiration commenced within thirty seconds after the extraction. The tongue was pulled forward. The heart was beating regularly but not strongly, the body remained rigid, and there was no inspiratory effort. About two minutes after the tooth was extracted, two or three expirations took place, showing there was no considerable obstruction in the larynx. Nitrate of amyl was applied to the nose and mouth; but as no inspirations took place it could not have affected the patient. A subcutaneous injection of ether was given over the præcordial region, as the action of the heart now became feeble. These measures failing, tracheotomy was performed within three minutes of the time the gas was discontinued to be administered; the position of the patient was awkward for the operation, and the extremely receding lower jaw, with a short, thick neck, made it somewhat difficult to perform, but as everything was at hand and ready assistance given I fortunately made an entrance through the upper rings of the trachea without loss of time. The tracheal wound was kept open, and on resuming artificial respiration a quantity of mucus (about an ounce) was forced out, nearly clear and only slightly blood-stained. Although one could hear air passing in and out of the opening in the trachea there was no voluntary effort of breathing from first to last. The patient now became still more cyanosed, and the heart could no longer be heard beating. Artificial respiration was continued for twenty minutes longer, although there was little hope of its being of use. Micturition took place after the commencement of taking the nitrous oxide, a symptom which I have not infrequently noticed when cyanosis becomes well marked, and also in children. I will recapitulate shortly the methods adopted to restore respiration: (1) artificial respiration within half a minute after the patient ceased to breathe, (2) nitrite of amyl within one minute after respiration ceased, (3) subcutaneous injection of ether within two minutes after the patient had ceased to breathe, and (4) tracheotomy within three minutes after the patient had ceased to breathe.

The necropsy was performed by Dr. Norman Moore, at the request of the coroner, twenty-five hours after death, in the presence of the medical attendant of the deceased and myself. Dr. Moore has kindly looked over and corrected the description of the morbid appearances. The body was well nourished and muscular, of a man about twenty-six years of age. The face, neck, and back were all deeply cyanosed; there was a mark of a recent tracheotomy wound. On removing the skull cap, which was unusually thick, venous engorgement was visible on the surface of the cerebral hemispheres; nothing abnormal was noticed in the cerebral substance. On opening the chest, the veins were noticed everywhere full of dark fluid blood. All the internal organs were healthy. The pericardium contained the normal amount of fluid. The heart was normal and the valves competent. All the cavities of the heart were empty, except a small quantity of fluid blood in the right ventricle. No clots were present. The lungs were engorged

[1] A paper read before the Society of Anæsthetists on March 15th, 1894.

with dark fluid blood and were nearly airless. On opening the bronchi, the mucous membrane was dark in colour and engorged, and a quantity of thick mucus was found in all the larger bronchi. The trachea was also engorged, but contained less mucus. The upper three rings were divided. The larynx, tonsils, and tongue were removed together for examination. The larynx showed no swelling and very little engorgement, and contained no appreciable quantity of mucus; no foreign body or abnormal substance was found. The tonsils showed old enlargement, but did not meet in the middle line. The stomach contained a small quantity of undigested food, with a good deal of ropy mucus. The œsophagus was normal. The liver, kidneys, and spleen were all dark in colour, showing venous engorgement, but without any signs of disease. The bladder was empty.

I have administered nitrous oxide gas to over 40,000 patients during the last twenty years and have never before had a fatal case.

In conclusion, it appears to me that the patient died from asphyxia, and the mucous membranes of the throat, larynx, and bronchi were perhaps peculiarly insensitive, for during the whole time of the administration of the gas, and subsequently, there was no symptom of irritation or coughing, as is often the case when a quantity of mucus gets into the air passages. The only point as regards treatment after the urgent symptoms showed themselves appears to me: Should tracheotomy have been done earlier? But then comes the question: How many times would tracheotomy have been performed unnecessarily? For in a large number of cases there are a certain few who, when embarrassment of breathing, with a considerable amount of cyanosis, takes place, soon recover, and to do tracheotomy without first resorting to other means would be incurring a slight risk from the operation itself, and it would leave a permanent mark of discredit on taking nitrous oxide. Now, as to the quality of the gas. Two cases were given from the same bottle immediately before, without the least unusual symptoms, and, thinking the question might be raised, I administered from the same bottle the next day with a good result, and have put it aside for any future investigation. The face piece which was used to administer the anæsthetic allows a small quantity of ordinary air to be inhaled through the outlet valve; I cannot estimate the exact quantity, but I should think about 2 per cent. It is, in fact, the quantity which by experience has been found in the majority of cases to cause less cyanosis and stertor, without interfering with the prolongation of insensibility. I have endeavoured to state clearly the facts of this case; it is distinct from those in which, during the administration of gas, a foreign body has fallen into the larynx and caused death. I trust that neither experience nor the caution in administering anæsthetics to which experience leads one were wanting, and I cannot offer any better explanatory hypothesis to the society than that well-worn one in other departments of medicine, "the idiosyncrasy of the patient." There were some special circumstances in his organism which made the temporary asphyxia from gas specially liable to pass into a fatal form.

Aldersgate-street, E.C.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.

A CASE OF TUMOUR OF THE SPINAL CORD; REMOVAL OF TUMOUR; DEATH.

(Under the care of Dr. FERRIER and Mr. W. WATSON CHEYNE).

WE give this week the account of a very interesting case of simple tumour growing within the dural sheath of the spinal cord and producing symptoms by increasing pressure on the cord. In this case the symptoms began with severe pain, and this was followed by motor paralysis, &c. Throughout the illness pain was the most marked feature, rendering life almost unendurable. In the collection of recorded cases by Mr. Horsley the majority of intra-dural growths had pain as the first symptom, and the most numerous class was that of the myxomata or fibro-myxomata. Amongst the number of intra-dural growths (thirty-six) twenty-one were found in females and fourteen in males. At that period only two—one extra-dural and one intra-dural—had been subjected to operation; the latter had recovered completely, the former died. Since 1888 a few more patients have willingly accepted the chance of relief offered by operation. We have quite recently recorded a case[1] in which operation, performed with good prospect of success, failed owing to accidental septic infection of the wound. The two cases may be compared with advantage; they illustrate well the difficulties and risks of the operation and show the symptoms and physical signs which rendered accurate diagnosis of the seat of the lesion possible.

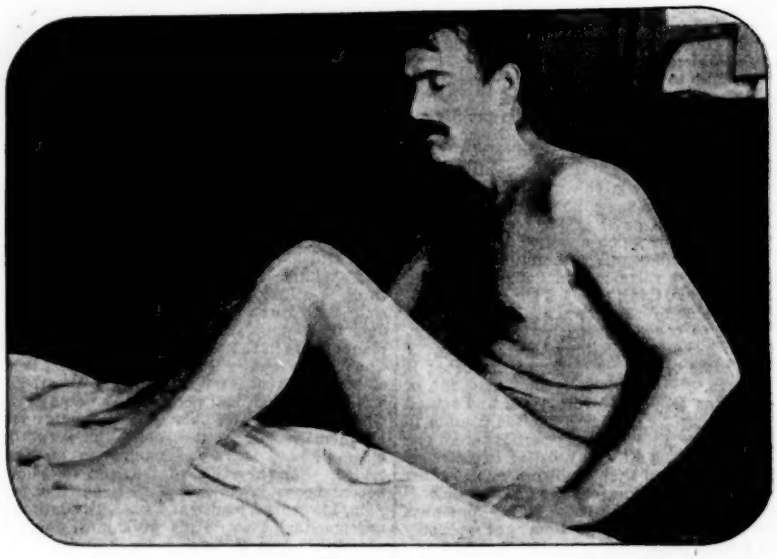
During his autumn holiday in the Shetland Islands, Mr. Watson Cheyne was asked to see this patient by Dr. Taylor of Mid Yell. At this time both legs were completely paralysed, both as to motion and sensation, and there was incontinence of urine. The patient sat in bed with both legs drawn up, and the slightest movement induced violent and painful extension of the limbs, with agonising pain in the dorsal region. Mr. Cheyne was not able to examine the patient very carefully, but the history of the case and the symptoms presented led him to believe that he was suffering from a tumour pressing on the spinal cord. He accordingly advised that he should be sent up to London with a view to further careful examination, and, if it should appear advisable, operative treatment. He was accordingly admitted into King's College Hospital under the care of Mr. Cheyne, by whom he was transferred to the care of Dr. Ferrier on his return from his holiday at the beginning of October.

Medical history of the case, by Dr. FERRIER.—The patient, a man aged twenty-five, was admitted into King's College Hospital on Sept. 18th, 1892. He was a fisherman, living in Shetland. He had been married four years, and had one child. Until his present illness began he had always been in good health. He had never been intemperate, and had never had syphilis. His Father, who is alive and aged seventy-three, is strong and healthy, as is also his mother, aged sixty-six. He has six brothers and five sisters. One brother died in infancy. About eight years ago he began to complain of pain in the region of the lower ribs on the right side. The pain was worse when he stooped, and it was also worse at night, so that it not infrequently disturbed his sleep. It was intermittent, and occasionally would cease entirely for a week or two. The pain shot backwards from the region above mentioned to the spine, and forwards towards the epigastrium. There was tenderness on pressure on this region. For the relief of the pain he sometimes received subcutaneous injections of morphia. Notwithstanding the pain, his general health and strength continued good, and he continued able to do his work until about two years ago. He then began to have some difficulty in lifting his right foot off the ground in walking, and he was obliged to keep his eyes on it, as otherwise he was apt to stumble. Along with the weakness of the right leg the sole of the right foot became "sore" or tender on standing. The left leg became similarly affected at a distinct interval after the right. He continued his employment for five months after the weakness showed itself in his legs. In June, 1891, he went into the Aberdeen Infirmary, where he was treated for a month. Shortly after leaving the Aberdeen Infirmary he had a very severe attack of pain in the right side and became unable to get about at all for a time. After three weeks he improved a little, the pain diminished, and in the following September he was able to get about with the aid of two sticks. In February of 1892 the pain became much more troublesome and prevented him resting at night. In May last he began to suffer from "cramps" in the legs, and had to pass urine very frequently. In July the bladder became paralysed.

The patient was a tall, well-nourished man, but with rather a pale, pasty complexion. There was slight ptosis of the right eyelid. The right iris was green, the left brown, and the left pupil slightly larger than the right. The general health was good, and no abnormality was detected in the heart, lungs, or organic viscera. The urine was neutral, of sp. gr. 1024, and free from albumen and sugar. The attitude of the patient was peculiar (see the figure). He was

[1] THE LANCET, Feb. 17th, 1894.

obliged to maintain a sitting position, propped up by pillows, with the thighs flexed on the pelvis, and the knees bent. Any attempt to lie down or change his position induced violent extensor spasms of the legs, and severe pain shooting up to the back, more particularly on the right side. He complained much of pain in the right side in the region of the last three ribs in the axillary line. This pain occasionally shot forwards towards the epigastrium and backwards towards the spine. The patient complained much also of pain caused by cramps in the legs, which, as before mentioned, were induced by any change of position. There was complete paralysis of motion in the lower extremities, and almost the same of the bladder. The knee-jerks were exaggerated, and ankle-clonus could be readily elicited on both sides. The plantar reflexes were slight but active. Muscular spasms were readily induced by severe stimulation. There was total loss of sensibility, tactile, thermal, and algesic, in the lower extremities, and up to a line bounded posteriorly by the second lumbar spine, and anteriorly by a line an inch below the umbilicus. The line was somewhat lower on the left side of the trunk than on the right (see lower line in the figure). Above the line of complete anæsthesia there was a zone of diminished sensibility, which extended above and included the umbilicus. The breadth of this zone varied from one to two or more inches. (See upper line in the figure). There was no abnormality of the intra-dural. The position of the tumour was indicated both by the region of distribution of the eccentric pains, and by the highest level of the sensory impairment of the trunk. This seemed to coincide very nearly with the region of distribution of the tenth dorsal nerve. According to Reid's investigations[3] the anatomical seat of the tumour would extend as high as the seventh dorsal spine, and a valuable confirmation of the diagnosis founded on the physiological symptoms was furnished by the fact that pain was elicited by deep pressure on the vertebral spines from the seventh to the tenth inclusive. Considering the otherwise irremediable character of the disease, it was considered advisable, both on theoretical grounds and from the successful result in Gowers' and Horsley's case,[4] to perform an operation with a view to remove the growth if possible. This was undertaken and skilfully performed by Mr. Watson Cheyne. The tumour, the size and characters of which are given below, was found in the region indicated, growing from the arachnoid, and situated more on the right than on the left side. It was only slightly adherent to the pia mater and was easily separated from it. Though the diagnosis was completely verified, and the tumour successfully removed, the patient, already exhausted by his severe and long-continued suffering, unfortunately succumbed to the constitutional disturbance which the opening of the spinal canal and removal of the tumour had set up.



vertebræ, nor did the patient complain spontaneously of pain in any part of the vertebral column. Deep pressure, however, induced pain over the spines of the seventh to the tenth dorsal inclusive. A consideration of the character and development of the symptoms in this case left little room for doubt that it was one of tumour within the spinal canal, originating on the right side and gradually compressing the whole cord. This was evidenced more particularly by the eccentric pains in the right side, long supposed to be neuralgic or rheumatic, but clearly due to irritation of the posterior roots, more especially of the ninth and tenth dorsal nerves, and the development of paralysis first of the right leg and ultimately of both. There was no indication of caries or other disease of the vertrebræ, or of aneurysm or of syphilis, and that the tumour was external to the cord was rendered probable by the intense irritation of the cord itself and of the posterior roots directly implicated in the growth. What was the exact character of the tumour and whether it was extra- or intra-dural could only be a matter of greater or less probability, but a comparison of the symptoms with those which have been recorded in other cases[2] led Dr. Ferrier to regard the case as one most probably

Surgical history of the case, by Mr. WATSON CHEYNE.—The patient was readmitted into Mr. Watson Cheyne's ward on Oct. 22nd in the condition described by Dr. Ferrier. As to his general condition he was stout, but anæmic, and much worn out with pain and want of sleep. The urine was acid, of specific gravity 1020, and contained no albumen, but a slight trace of sugar. There was some hydrocele fluid in the left tunica vaginalis; the epididymis on both sides was enlarged, but the cords and the vesiculæ seminales were not thickened. The left testicle was decidedly smaller than the right. The pulse was soft and 68. The heart sounds were normal. It was also noted that the lung sounds were normal, but in view of the post-mortem appearances this must have been incorrect. The operation took place on Monday, Oct. 24th. When under the anæsthetic (at first chloroform, and subsequently A.C.E. mixture) the patient was turned over on his left side, in fact almost on his face, and before the operation was commenced, a marked difference was noted between the pulse on the two sides, that on the left side being for the most part imperceptible. This was not the

[2] See Horsley's useful compilation, Cases of Tumour of the Spinal Cord. Gowers and Horsley, Transactions of the Royal Medical and Chirurgical Society, vol. lxxi. 1888.

[3] The Relations between the Superficial Regions of the Spinal Nerves from the Spinal Cord and the Spinous Processes to the Vertebræ, Journal of Anatomy and Physiology, vol. xxiii.

[4] Loc. cit.

result of pressure on the arm, and the dieffrence between the two pulses persisted after the operation. The ninth dorsal spine having been marked by pushing a needle into it, and all the usual antiseptic precautions having been taken, the spines and laminæ of the sixth to the tenth dorsal vertebræ were rapidly cleared, and the spines of the sixth, seventh, eighth, and ninth were clipped off by cutting pliers. The laminæ of the seventh, eighth, and ninth vertebræ were then sawn almost completely through on each side, and the separation was completed by very gentle use of a chisel. A strong elevator was then introduced between the ninth and tenth laminæ, and the plate, consisting of the three separated laminæ, was readily raised and held up like the lid of a box, the hinge being the ligamentous structures between the sixth and seventh laminæ. On pushing aside the fat with the handle of the knife, the dura mater was exposed and seen to be distended by a tumour, which at one part had thinned and almost burst through it. The dura mater was then slit up, and the tumour, which was lying to the right up and behind the cord, was gently and easily separated. It reached as high as the lower border of the sixth dorsal lamina, being there, however, quite narrow, and it was thickest opposite the eight. But it was found to extend downwards beneath the tenth lamina (and subsequently slightly beneath the eleventh), and therefore the tenth lamina was divided in a similar manner and turned down. The tumour was then removed without the slightest difficulty or injury to cord or nerves. A few fine catgut stitches were put in the dura mater, the laminæ were replaced in position, the muscles were brought together by a couple of stitches, the skin wound was closed by continuous suture, and the usual antiseptic dressings were applied. The patient's temperature half an hour after the operation was 95° F.; but three hours and a half later it had reached 100°, the pulse, however, being very rapid and scarcely perceptible. The pulse improved after strychnine, and when Mr. Cheyne saw the patient at 10 P.M. (six hours and a half after the operation) his pulse was much fuller but irregular and rapid, and his temperature was 99 6°. He had had much pain, for which a quarter of a grain of morphia had been given, and there had been very free oozing of cerebro-spinal fluid. His pulse failed again very shortly afterwards and remained very irregular and quick, sometimes imperceptible on one side and fairly good on the other, and then the sides would be reversed, the pulse previously felt having disappeared, while that on the other side had become quite perceptible. Strychnine, digitalis, and ether were given several times during the night, and on the forenoon of Tuesday his condition improved, but with it the old pain returned so violently that morphia had to be again administered.

In the afternoon of Tuesday he again relapsed into the same condition in which he was during the night, and although he once or twice improved somewhat he died about 1 A.M. on Wednesday morning. Twelve ounces of urine were drawn off at 5 A.M. on Tuesday morning. In the forenoon he passed six ounces himself, having been able to retain it till the bottle was handed him. (Before the operation he felt the desire to pass urine but could not retain it for an instant.) At 4 P.M. a catheter was passed, but only one and a half ounces were obtained, and apparently no more was secreted. The temperature during Tuesday kept at about 100° or a little over, but shortly before death it rose to 102°. On post-mortem examination the apices of both lungs were found to be extensively infiltrated with tubercle, and fresh deposit was evidently going on actively. Under the capsule of the right kidney there was a large caseous abscess, and there were several small calculi in the pelvis, with slight pyelitis on both sides; the brain and other organs were normal. As to the spinal cord, the seat of the operation seemed to be quite healthy; there was a normal quantity of lymph thrown out in the region of the operation. The part of the cord corresponding to the tumour was flattened and quite soft. Elsewhere the cord was firm, and the pia mater was congested, but there was no lymph or turbid fluid. The plates of bone, which had been replaced were lying in good position. The tumour proved, on examination, to be a soft myxo-fibroma. The tumour was of an elliptical shape and soft, and of yellowish white colour. It measured three inches in length and one inch in width at the centre, which was its widest part. Along its margins there was here and there a suggestion of lobulation on the tumour's surface. The capsule that surrounded the growth was thin and loose, and contained ramifying bloodvessels, particularly near the centre of the tumour. In the centre of the growth there was a cyst that contained dark-coloured fluid, the walls of which were in parts a quarter of an inch thick, and in other places only an eighth of an inch, and at one extremity the wall was apparently formed by the capsule only. On examination the tumour was found to consist of an embryonic connective tissue, and would be assigned to the class of the fibro-myxomata.

Examination of the spinal cord by Dr. ALDREN TURNER.—First, as to the seat of lesion: owing to the pressure having been more on one side than the other, the symmetry of the cord was altered. There was myelitis, involving chiefly the posterior columns and the lateral column on one side, and extending to a less degree over the whole cross-section. The myelitis consisted of an increase of neuroglia, with a great number of nuclei stained by carmine. Interspersed amongst these there were numbers of nerve fibres more or less broken up, the myeline sheaths of which were in all stages of disintegration. The bloodvessels were enormously distended. The cells of the anterior horns were not atrophied. Secondly, below the lesion, there was degeneration in both crossed pyramidal tracts, but more advanced on one side than the other. There was also a degeneration in the antero-lateral descending tract, but not in the direct pyramidal. There was considerable distension of the vessels of the pia mater and of the nerve roots as far down as the fifth lumbar. Thirdly, *above the lesion*, there was sclerosis of the whole of the posterior columns immediately above, with the exception of a small zone forming the posterior root zone; there was also a considerable belt of peripheral (marginal) myelitis, in which the direct cerebellar and antero-lateral ascending tracts could be distinguished. The sclerosis of the posterior column diminished in size through the upper parts of the cord and in the upper cervical region occupied the position of the direct fibres from the lumbar and lower dorsal nerve roots. The antero-lateral tract of Gowers was degenerated throughout the whole length of the cord; but the direct cerebellar was degenerated to a less extent and was somewhat more marked on one side than the other. The distension of the pial bloodvessels could be traced as high as the cervical enlargement.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY.

IMPERFORATE ANUS IN A GIRL EIGHT YEARS OF AGE; OPERATION; RECOVERY; REMARKS.

(Under the care of Dr. NEWMAN.)

THE following is the short account of another case of imperforate anus in which the rectum communicated with the vagina. Although, like the case which we recently published in THE LANCET, it shows the recovery of the patient from the great danger of the malformation in its early stage, it illustrates more fully the great inconvenience and ill-health which attend such a condition at a later period of life.

A female child eight years of age was admitted into the Stamford, Rutland, and General Infirmary on June 2nd, 1885. The child had been seen and examined when but a few weeks old, but from some deep-rooted objection to interference on the part of the parents they had allowed matters to go on untreated. It is needless to describe the local distress or to dwell on the discomfort of the child's daily life. On admission the abdomen was greatly distended, and dulness was almost absolute over the ascending and descending colon; the fæces were dark-green, pultaceous, and constantly exuding from the vagina. "The child walks and sits with trunk bent forwards, and usually has the hands clasped over the abdomen as if to give support." On June 6th, under the influence of ether, a careful examination with a stout probe bent at an acute angle on itself and introduced through the recto-vaginal opening showed considerable depth of tissues where the anal aperture should have existed. An incision about one inch long was made in the middle line of the perineum, commencing about three-quarters of an inch from the posterior edge of the vaginal aperture. Slow dissection in the line of the rectum was made; at last, at a depth of little short of two inches from the perineum, the gut was found full of fæcal matter. The edges of the gut were drawn down and stitched to the external orifice. A gum elastic lithotomy tube shortened to two inches was introduced and fixed *in situ*. Steady extrusion of fæces

commenced and for many days continued, partly per vaginam, partly through the new aperture. On two or three occasions hard fæcal masses were broken up under an anæsthetic and removed by the use of injections aided by a lithotomy scoop. Apple-pips were repeatedly seen in the evacuations, although for several weeks no apples had been eaten. A total of over eight pounds of fæcal matter was collected in about twenty-eight days, all being of the same dark-green colour and dry consistence; subsequently the evacuations became healthy in appearance. Later there was evidence of grave constitutional disturbance, the temperature rising to 102° and 104° F.; there was also reason to believe in the existence of considerable post-peritoneal suppuration, and a free escape of pus took place through the wound. It was not until nearly two months had elapsed after the operation that the child could be said to be distinctly doing well. A large abscess cavity could be made out posterior to the rectum, and this contracted and closed but slowly. On two occasions it was found desirable to incise the narrowing entrance into the large rectal pouch, and after the last division the daily passage of a metal bougie was resorted to. On Dec. 8th the child went home in good health with a satisfactory daily relief per anum and with a much-lessening escape of fæcal matters per vaginam.

In January, 1888, she was again admitted to hospital with a large accumulation in the course of the colon. Within a few days the bowels were well relieved with enemata and castor oil and the difficulty passed away. The child was noted to have grown considerably, to have been quite straight, and to have been in a much better condition. There was only a small escape per vaginam, and that but rarely. The report of succeeding years has invariably been good. The patient is now (March, 1894) a tall, well-grown young woman, without local trouble or discomfort. The mother says that there is only a mere occasional stain on the linen to mark the existence of a recto-vaginal fistula.

Remarks by Dr. NEWMAN.—The above-detailed case may form a fitting pendant to that reported in THE LANCET of Feb. 17th last as having occurred in the Hull Royal Infirmary under the care of Mr. Thompson. The absolute success of the latter cannot be claimed in this instance, but it seems more than probable that the fistulous communication between the two channels will not prove a source of inconvenience in the future.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Diagnosis of Diphtheria by Bacteriological Cultures.—Milk Diet in Bright's Disease.

AN ordinary meeting of this society was held on March 19th, the newly elected President, Sir WILLIAM DALBY, being in the chair.

Votes of thanks to Dr. Bristowe, the late President, and to the other retiring officers of the society were passed by the meeting.

Dr. WETHERED read a paper on the Diagnosis of Diphtheria by Bacteriological Cultures. He said that usually cases of diphtheria presented no difficulty in diagnosis, yet there were a fair number in which it was not at all an easy matter to decide whether the case in question was one of follicular tonsillitis or diphtheria. The discovery of the bacillus of diphtheria by Klebs and Löffler suggested that a very considerable aid to diagnosis might be found in bacteriological cultures obtained from deposits found in the patient's throat. The procedure, however, could only be carried out in hospitals or laboratories provided with apparatus for bacteriological research. Dr. Wethered took the opportunity of thanking the members of the Middlesex Hospital medical staff for their kindness in allowing him to obtain the required material from their patients. He also asked the society to regard his paper merely as a preliminary communication, as he hoped to conduct another series of observations upon rather different lines. In the cases which he brought to their notice that evening he had relied entirely on the morphological characters of the Klebs-Löffler bacillus, and quoted such observers as Councilman and Williams as having done the same. He had examined twenty-six cases of diphtheria and sixteen of follicular tonsillitis. His method was to obtain particles of the deposit from the throat by means of a strong piece of platinum wire fixed in a glass handle and bent into a loop at the end. The portion thus obtained was drawn over the surface of glycerine agar-agar contained in tubes, which were placed in an incubator at a temperature of 37° C. for twenty-four hours, and these cultures were then examined microscopically. In sixteen cases of follicular tonsillitis he found staphylococci only, and in one case bacterium termo also, but no organism which could in any way be mistaken for the bacilli of diphtheria. In twenty-six cases of diphtheria he found the Klebs-Löffler bacillus fifteen times, streptococci three times, and staphylococci eight times. Baginski had stated that streptococci might cause a mild form of diphtheria; but of his (Dr. Wethered's) cases two recovered and one died. He gave briefly the reasons why he failed to find bacilli in the remaining eight cases, and after giving details of two cases in which the diagnosis was uncertain but which were proved to be diphtheria by means of cultures, he offered the following suggestions:—1. That bacteriological examination of material obtained from the throat in doubtful cases of diphtheria might prove of great service in diagnosis. 2. That on microscopical examination there was no great danger of mistaking organisms found in cases of follicular tonsillitis for the pathogenic organism of diphtheria, although the naked-eye appearances of the cultures were not characteristic. 3. That as some observers had described non-malignant organisms similar to the diphtheria bacillus in case of doubt, plate cultures on gelatine should be made as control experiments.—The PRESIDENT remarked that, apart from the immediate interest of the patients themselves, there were cases in which it was most important to arrive rapidly at a correct diagnosis of throat maladies. This often occurred where outbreaks took place in schools and other institutions.—Dr. ROUTH suggested that it would be valuable if a protective inoculation with attenuated virus could be carried out.—Dr. WETHERED briefly replied.

Dr. RALFE then read a paper on Milk Diet in Bright's Disease. He remarked that the exclusive use of milk as a diet in Bright's disease in all its stages had found considerable acceptance with the profession generally, though, however, recently its utility had been questioned with regard to the more chronic stages, and some observers had even gone so far as not only to recommend a more stimulating but even a full ordinary diet in such cases. The fact, however, that milk, either exclusively or, at least, in considerable quantities, had proved beneficial in a large number of cases was incontestable, and a method of diet which could produce such evidence must not be lightly abandoned without an investigation into the causes of failure in any given instance. Dr. Ralfe in the present paper gave the result of observations made by him of the effect of a milk diet on the secretion of urine as regarded its quantity, amount of solids, and excretion of urea and albumen in patients suffering from nephritis in its different stages, such as ordinary acute nephritis; chronic nephritis with active hypertrophy of the left ventricle, with strong pulse tension; chronic nephritis, with failing cardiac action and degenerated vessels; chronic renal cirrhosis from venous congestion, the result of valvular disease of the heart; and nephritis complicated with lardaceous disease. The patients at first, for one week, were placed on an ordinary diet (containing four ounces of meat), and afterwards for two or three weeks kept on milk, and then again for a week resumed the ordinary diet. The results were given in charts showing the weekly averages of the quantity of urine passed, the solids, the urea, and albumen. With regard to *acute nephritis*, it was found that the effect of a milk diet was to increase the quantity of urine, the amount of solids, and the urea, and to diminish the albumen, all which was reversed when a more stimulating diet was resumed. In the *chronic cases* the milk diet had not such a marked diuretic effect on the amount of urine secreted, but caused a decided fall in the quantity of solids and of urea. The effect on the amount of albumen was varied; in nephritis associated with high pulse tension it was certainly lessened, but in nephritis with failing cardiac action and degenerated vessels very little change occurred. Besides these observations on the urine, Dr. Ralfe made allusion to the general effect on the patient of the different diets as regarded nutrition and action on the vascular system. As a rule the milk diet was well borne by the acute cases, and they certainly improved under its use. On the other hand, the chronic cases generally disliked milk from the first, they did not improve

under it, and it certainly increased the uræmic symptoms. It had, however, a considerable influence in reducing the tension of the pulse, which rose again on the resumption of a diet containing meat. This raising of the pulse tension was an important objection to the use of a too stimulating diet in cases in which there was a strongly acting vascular system, for fear of its inducing cerebral hæmorrhage—a risk as great, Dr. Ralfe thought, as of inducing uræmia by too low a diet. The exclusive use of milk should be confined to acute cases alone, and for a time perhaps to chronic cases, when it might be necessary to reduce the action of the vascular system. In cases with a failing heart and degenerated vessels a more stimulating diet was called for, but he was of opinion that its effect should be carefully watched, and it should only be given in small quantities at a time.—Dr. HALE WHITE said that the conclusions to which he had come resembled those of Dr. Ralfe. He had the urine analysed in ten cases and several hundred analyses were made, the general condition of the patient being also noted. None of his patients suffered from acute Bright's disease, but he agreed with all that Dr. Ralfe had said with regard to that class. In the chronic cases the administration of milk gave rise to a slight increase in the amount of urine secreted and caused a corresponding diminution in the specific gravity. The albumen excreted was, in all but two cases, greater on a milk diet than on a more highly nitrogenous diet; this, as explained in the paper, was due to the action of the fuller diet on the circulation. He thought that too much stress was habitually laid on the mere amount of albumen present. More than half the cases of albuminuria admitted to hospital were not cases of Bright's disease at all, but were due to cystitis, heart affection, or other causes. The amount of albumen lost in most cases was very small indeed compared with the body weight. There was no doubt that, whereas the milk diet increased the tendency to uræmia, there was no such increased tendency with a hospital full diet. In the case of a patient under his care some years ago, who had had a uræmic attack and who had been kept strictly on milk, the first day his symptoms began to mend at all he was placed on full diet, with the result that the patient rapidly convalesced and he returned to work. As to the general condition of the patients, this was in many cases improved by giving ordinary diet. On a milk diet they often got weak and low; they loathed the milk, and when the meat diet was commenced their spirits increased and their weight at once went up. If it was necessary to adopt a routine dietetic treatment for chronic Bright's disease, he preferred, as a rule, that the patients should be placed on a full diet rather than on a milk diet.—Dr. SOLOMON SMITH inquired whether the condition of the patient's digestion was also noted. In many cases the milk might disagree, and for that reason not be digested, and hence these patients were submitted to a form of starvation, which might aggravate the albuminuric condition.—Dr. SHUTTLEWORTH said that he supposed when milk diet was referred to the ordinary milk diet of the London hospitals was meant. When he had charge of the Royal Albert Asylum many of the epileptic children were kept on an exclusively milk diet. When the milk was boiled it disagreed with several of the children, but this difficulty was overcome by giving the milk fresh and uncooked. He asked whether the relative values of asses' milk and of the various preserved milks had been ascertained.—Dr. GARSON inquired as to the means employed in separating the various solids in the urine, the analyses of which had been given.—Dr. KELSON referred to two cases of Bright's disease in which, in addition to milk, a large quantity of eggs was given, with the most disastrous results, for in one case anasarca rapidly supervened, and in the other cerebral hæmorrhage came on. No medicine was given when the eggs were added to the diet, and the latter otherwise was the same as before the addition of the eggs.—Dr. WETHERED observed that the change from a full diet to a low one was much more marked in the case of private patients than in hospital cases, and he asked Dr. Ralfe whether a corresponding difference had been noticed in the results of the analyses.—Dr. RALFE, in reply, said that he thought all were now agreed that an exclusive milk diet was bad in some cases, but he hoped that practitioners would not swing the pendulum too far the other way. It should be carefully explained that full diet as used in hospitals did not mean the same thing as it did to private patients—namely, an unlimited indulgence in the pleasures of the table. A too full diet caused at once a considerable rise of pulse tension. What was wanted was that the diet should be much more solid, but not much more stimulating. He had tried the exhibition of sugar in large doses, but the results only confirmed what Prout had pointed out long ago—that such a diet was not tolerated by chronic albuminurics. He had given to his patients ordinary hospital milk diet, taken with effervescing water if wished. The milk was either skimmed or cooked if the patient so preferred it.

PATHOLOGICAL SOCIETY OF LONDON.

Deformity of Shoulder Girdle.—Histological Changes in Breast, associated with Carcinoma.—Left Hemisphere in Aphasia.

AN ordinary meeting of this society was held on March 20th, Dr. PAVY, president, being in the chair.

Mr. J. HUTCHINSON, jun., exhibited a specimen of Malformation of the Left Shoulder Girdle obtained from a child. The deformity consisted in a bridge of bone developed from the laminæ of the third, fourth, fifth, and sixth cervical vertebræ, which articulated with the upper end of the inner border of the scapula; it was of the same nature as described by Messrs. Willett and Walsham at the Royal Medical and Chirurgical Society, and found by them in two cases. During life the scapula was found just under the occiput, and could not be materially depressed from this position. The abnormal process was certainly developed from the vertebral laminæ, which on the affected side showed evidence of abnormal ossification by the fusion of three of them together.—Mr. BOWLBY said that this specimen gave confirmatory evidence of the association of the condition with some abnormality in the development of the vertebræ, and asked if any alteration was noticed in the muscles which attached the scapula to the spine.—Mr. HUTCHINSON, in reply, said that the rhomboids were normal and the cervical prolongation of the erector spinæ passed under the bridge of bone.

Mr. CECIL F. BEADLES read a further note on the Histological Changes to be found in the Breast when the Seat of Carcinoma. He described an irregular and abnormal development of the glandular epithelium, which he considered the commencement of carcinoma in a lobule, and referred at length to a case in which, without the formation of any palpable tumour, were displayed small areas scattered about, which under the microscope were seen to be foci of what closely resembled glandular carcinoma. He explained in detail, with drawings, micro-photographs, and sections, the microscopical appearances to which he had made reference.—Mr. JACKSON CLARKE corroborated the general histological outlines which had been given.—Mr. RAYMOND JOHNSON questioned if Mr. Beadles was justified in labeling some of the specimens carcinomatous.—Mr. BOWLBY pointed out that changes in the outlying parts of breasts affected with cancer did not differ materially from changes associated with involution or the development of benign growths, and differed from Mr. Beadles in his interpretation of the facts put forward.

Dr. ORD and Mr. S. G. SHATTOCK showed the Left Hemisphere of a Brain from a case of Aphasia. The patient was a man aged sixty-one, admitted to hospital four days after the sudden onset of aphasia. He was when admitted able to speak and to show that he recognised objects put before him, though incapable of naming them. He spoke with hesitation and with exaggerated facial movements. The naso-labial fold was less marked on the right than on the left side, but very slightly so. The patient could frown, smile, shut his eyes, show his teeth as well on the right side as on the left. The masseter and temporal muscles contracted with equal force on both sides; the tongue was projected straight in the middle line. Death occurred forty days after admission. Examination of the left hemisphere showed a depressed yellow area of softening in the lower frontal convolution, corresponding with the proper aphasic area of Broca, but behind this was a second similar area occupying the lowest part of the ascending frontal convolution. This area extended in the upward direction from the posterior limb of the Sylvian fissure for a distance of one inch, and involved the larger anterior part of the convolution in question, there being, however, a hinder uninvolved strip. The interest attaching to the specimen arose from the fact that the only facial affection was some paralysis of the opposite levator labii superioris alæque nasi. In the monkey the centre for this muscle lay in the ascending frontal convolution opposite the highest part of the third frontal. It would seem that,

although the face and tongue centre in man lay in the lowest third of the ascending frontal convolution, there was a special area in the anterior portion of the lowest third of this convolution which was not part of this centre; and as the area corresponded with what had been shown by Dr. Felix Semon and Professor Horsley, in the monkey, to be the phonatory centre, the writers thought that it might provisionally be held to have the same function in the human subject. In the monkey, stimulation of the centre in question produced a bilateral result—viz., adduction of the vocal cords. Seeing that the corresponding area on the right hemisphere was uninvolved, the absence of any affection of phonation in the case recorded was intelligible.—Dr. BRADFORD asked if the brain was considered to be an ordinarily convoluted one, especially as to its middle and inferior frontal lobes? The patient could repeat words said to him, and though he could not name objects he could repeat the names of the objects to dictation. This had been considered indicative of lesion at the posterior end of the Sylvian fissure in the superior temporo-sphenoidal or angular convolutions, but in this case it appeared to be produced by a lesion at the anterior end of the Sylvian fissure. He inquired if the extreme lower end of the ascending frontal convolution was softened.—Dr. ORD and Mr. SHATTOCK replied.

OTHER METROPOLITAN MEDICAL SOCIETIES.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY.—At the meeting of the above society held on March 8th, Dr. HENTY being in the chair, the Diagnosis of Tropical Diseases in London and Extra-uterine Gestation formed the subjects of consideration.—Dr. PATRICK MANSON read a paper on Some Points in the Diagnosis of Tropical Diseases seen in London. He considered first the subject of malaria. The appearance and course of development of the blood parasite of malaria was described and demonstrated, whilst the occurrence of the crescentic and flagellated forms of the organism, and the ease with which its forms could be demonstrated, were remarked upon. The occurrence of the "amœba coli" in certain varieties of dysentery and its discovery in the contents and discharges from liver abscess were described as of great diagnostic importance. The speaker then proceeded to mention the species of larval filariæ found in the blood, and spoke of their discovery as of great importance as an element in the differential diagnosis of certain diseases of the lymphatic circulation which had been mistaken from time to time for herniæ, abscesses, &c. The occurrence of the distomum pulmonale was next referred to. The recognition of the ova in hæmorrhagic expectoration being a matter of great importance. The frequency of aneurysm of the thoracic aorta in regions where syphilis was rife, and opportunities for treatment being few, rendered it specially important to recognise the hæmoptysis of pulmonary distomiasis from the expectoration caused by a perforating thoracic aneurysm or other condition. The appearance of the bilharzia hæmatobia was described, and its significance in cases of tropical hæmaturia pointed out. Finally, the escape of the ciliated embryo from the ovum and the method most suitable for its demonstration were described.—Mr. EVAN JONES related a case of Extra-Uterine Gestation, in which rupture occurred at the end of the ninth week. On being called to the patient symptoms of severe hæmorrhage and great collapse were apparent, and abdominal section was performed. A tubal pregnancy was found to have existed, and means were taken for the removal of the fœtation with the corresponding ovary. The patient recovered rapidly, and is now perfectly well.

SOCIETY OF ANÆSTHETISTS.—At a meeting held on Thursday, Feb. 15th, 1894, Mr. F. WOODHOUSE BRAINE in the chair, the PRESIDENT called upon Mr. G. H. Bailey to open a discussion on the Administration of Anæsthetics in Operations on the Nose and Throat.—Mr. BAILEY said that these operations might take from a few seconds to upwards of an hour; it was difficult, therefore, to decide offhand as to which was the best anæsthetic for such variable times. As the discussion promised to be an interesting one, he might, perhaps, best introduce it by referring to his own methods. For short operations nitrous oxide gas alone (or with a small quantity of added ether) sufficed; for longer ones he produced the full effects of ether, followed, when necessary, by chloroform blown into the open mouth through a tube attached to a Junker's inhaler. He strongly deprecated the use of chloroform as a preliminary to the use of ether.—Mr. WOODHOUSE BRAINE preferred to use gas and ether, supplemented, when necessary, by chloroform. With regard to position, he commenced with the patient semi-recumbent; when the operation was commenced the trunk was forcibly flexed on the thighs, bringing the mouth over the knees, so that the blood flowed freely out of the nose and open mouth.—Mr. W. TYRRELL confined his remarks to administrations for the removal of tonsils and adenoids. He had had no experience of the removal of these growths in the short space of three-quarters of a minute, as had been described by some. Speaking only as an anæsthetist, he had come to the conclusion that their complete removal occupied from ten to twenty minutes. He always administered chloroform from the beginning, using a Junker's inhaler, with a flannel face-piece and a Krohne's graduated tap. He commenced very gradually and imperceptibly increased the strength of the vapour. The patient was usually in the recumbent position with the head extended or turned to one side. He maintained the anæsthesia by means of a tube, taking care not to abolish the cough and swallowing reflexes, which, with a little practice, he believed to be quite possible. For adults he commenced with ether and continued with chloroform.—Dr. HEWITT considered the subject from three points of view—viz., the best anæsthetic for the particular operation; the position of the patient; and the degree of anæsthesia to be secured. While fully admitting that very brief operations could be performed under nitrous oxide alone, he had found that most operators preferred a longer anæsthesia than that afforded by this substance; generally speaking, therefore, be used ether preceded by nitrous oxide or the A.C.E. mixture. He also commended the plan of "charging up" the patient with a large dose of ether before starting the operation. When necessary he maintained the anæsthesia by means of chloroform, using a Junker's inhaler and tube, and taking care to throw the stream of chloroform into the channel through which respiration was proceeding. With regard to position, when the surgeon required the patient to be in the sitting posture, Dr. Hewitt thought that ether should be given and the patient bent forward when necessary, to permit the blood &c. to run out. Otherwise he preferred the lateral position, though of course the anæsthetist should be prepared to administer in any position. As regarded the degree of anæsthesia he thought that deglutition should be allowed to persist, and in very long cases a minor degree of phonation was permissible. The more free the hæmorrhage, the lighter should be the anæsthesia.—Dr. DUDLEY BUXTON thought that the choice of an anæsthetic in operations about the air passages must necessarily vary with the nature of the operation, and that although the anæsthetist might regard one anæsthetic as best for a particular purpose the surgeon often preferred another; and as, after all, the convenience and personal feelings of the operator were important factors in the satisfactory performance of the operation the anæsthetist should be prepared to give whatever anæsthetic was asked for. The position of the patient was very material. The postures that he was most familiar with were (1) with the head hanging over the end of the table, (2) with the neck only slightly extended over a pillow, and (3) sitting. In the latter position, of course, the use of chloroform was not permissible, but in this, as well as in the other positions, he was himself in the habit of giving gas and ether, followed in the two former cases by chloroform, out of a mouth-tube when necessary. The sitting position—gas only, or gas and ether, being alone employed—possessed many advantages. For more prolonged operations—upon the tongue or upper jaw, for instance—gas and ether often sufficed, the patient being thoroughly "soaked" with ether before commencing the operation.—Dr. SILK had found that many surgeons objected to the use of gas and ether in adenoid and similar operations on the ground that there was a considerable increase of the hæmorrhage, and he thought that they were right in their objection, especially when it was considered that the head was often, for the convenience of the operator, placed in a dependent position, and that the patients were delicate children who could not afford to lose more blood than was absolutely necessary. It had, too, been objected, and he thought rightly, that the continuity of the anæsthesia was destroyed by preceding the chloroform by ether, the patient tending to come round before the chloroform took effect. This, too, he thought was true. For these and other reasons he preferred to limit the use of ether to those cases in which only the simple scraping operation was to be performed, the patient being placed in a sitting position. The majority of surgeons,

he thought, were not contented with the completeness of these scraping operations; for these, therefore, he would prefer to use the A.C.E. mixture, maintaining the continuity of the anæsthesia with chloroform out of a tube and taking very particular care that no more of the anæsthetic was given than was absolutely necessary. With regard to more formidable operations, such as thyroidectomies, he also preferred the A.C.E. mixture, for, in addition to other objections to the use of ether, in these cases he thought that there was an additional danger of even slight spasm or accumulation of mucus totally occluding the already narrowed trachea.—Mr. LENNOX BROWNE, as a visitor, said that he thought that cocaine was useful in many cases. He objected to the A.C.E. mixture on account of the difference in the volatility of its constituents. While experts might be able to secure and maintain a modified narcosis, as indicated by the abolition of the corneal and the retention of the cough reflex, he did not think that practitioners who were not experts could assure this degree of precision. He objected to the use of the chloroform tube. He claimed that under gas, rarely supplemented with a few whiffs of ether, a thorough removal of all tonsillar obstructions, whether faucial or pharyngeal, could be effected, and time allowed to permit an onlooker to make a brief digital examination, both before and after the operation. He objected to the supine position, with the head extended, because the congestion was increased and the important structures at the root of the neck were liable to be unduly stretched, and, further, the orifices of the nares were not available for the escape of blood &c. He thought that Wingrave's central mouth prop was useful in these operations.—Mr. GRANT MORRIS spoke in favour of the plan suggested by Mr. Tyrrell. He had usually worked with the patient's head extended, and by supporting it with his knees he thought that the danger of undue stretching of the vessels and nerves was avoided. Hæmorrhage might be controlled by the pressure of a sponge held in a sponge-holder in the naso-pharynx.—Mr. HENRY DAVIS preferred chloroform for children under six, retaining the cough reflex. He did not use Junker's inhaler in these cases. With the patient lying with head extended the blood ran from the larynx, and the free air-way to the lungs was preserved. In the cases of patients aged six years and upwards he commenced with gas and ether.—Mr. MARMADUKE SHEILD, as a visitor, said that, having tried all positions, he had come to the conclusion that the lateral was the most advantageous. While agreeing that in young children adenoids could be removed in a very short space of time, he thought that, to be perfectly performed, the operation took much longer in adults. In operations of length he thought that ether followed by chloroform was best. He advocated preliminary ligature of the external carotid in vascular tumours of the upper jaw, and when, as in some goitres, the trachea was permanently narrowed like a scabbard, he thought that no anæsthetic at all should be given, but that cocaine should be used.—Mr. BAILEY briefly replied.

PROVINCIAL MEDICAL SOCIETIES.

LIVERPOOL MEDICAL INSTITUTION.—A meeting of this society was held on March 15th, Mr. CHAUNCY PUZEY, President, in the chair.—Mr. DAMER HARRISSON opened a debate on the Value of Abdominal Operations in the Treatment of Malignant Disease of the Alimentary Tract, in which was included the adjourned discussion on Mr. Banks's two fatal cases of Gastro-enterostomy for Pyloric Cancer. Mr. Harrisson was of opinion that gastrostomy should be performed directly it was impossible to introduce semi-solid food through the œsophagus into the stomach. He did not believe that gastro-enterostomy prolonged life very much, but that there was a great future for this operation if, in suitable cases, it was combined with pylorectomy. Pylorectomy should only be performed where a small, freely movable tumour could be felt and before the stomach was greatly distended. Directly it was decided that excision of the rectum was not applicable to the case he thought that a colotomy should be at once performed.—Dr. ALEXANDER said that surgeons were engaged in a determined contest with disease of the alimentary tract, and that initial operations would probably be as unfavourable for a time as were ovariotomy and hysterectomy a few years ago; but he was confident that success would come in the end. Malignant disease being local in its commencement, the problem was simple if early diagnosis could be made; unfortunately neither the operative procedure nor the diagnosis were very satisfactory at the present time. When the operative technique had been more perfected patients would be willing to submit to exploratory operations for diagnosis, and then, if the disease was met with in its earliest development, there was a good chance of its being successfully removed. He thought that palliative operations were only justifiable by urgent necessity, and even when performed they frequently were most disappointing to the patient.—Dr. BARR said that the physician was often blamed for not handing over the cases to the surgeon sufficiently early, but it must be remembered that the diagnosis of early malignant disease of the alimentary tract was often extremely difficult, and that the cases were often far advanced before they first came under the care of the physician. He thought that surgeons should more frequently explore the abdomen and have the courage simply to close the wound again if complete removal of the disease was not possible.—Dr. CARTER said that on the successful termination of Dr. Rawdon's case of pylorectomy for cancer he entertained strong hopes that a new and beneficent sphere of action had been opened to surgery, but subsequent experience had not strengthened this hopeful view. At present the diagnosis could only be made by the appearance of a tumour, and then in nearly all the cases it was too late for successful operation. He did not think that in the near future a patient would be willing to undergo abdominal section for the mere purpose of clearing up a doubtful diagnosis; so soon, however, as a tumour could be felt he saw no objection to the performance of an exploratory operation, with the possibility in view that the disease might be able to be eradicated.—Mr. ROBERT JONES had very little faith in the utility of gastrostomy and gastro-enterostomy; he, however, thought that there was a distinct future for pylorectomy. It was a fact of great clinical value that the pyloric glands were not early involved in cancer.—Mr. PAUL said that palliative operations for the relief of cancer of the alimentary tract would in the future be largely replaced by radical operations. When nourishment could no longer be passed through a cancerous œsophagus he thought that a successfully performed gastrostomy afforded great relief to the patient. When surgeons had more experience in operating on *early* cases of pyloric cancer, pylorectomy would become an established success. Owing to the operative difficulties met with in gastro-enterostomy, he considered this procedure still *sub judice*. In the case of cancer above the rectum he could speak with more confidence, as he had performed colectomy six times. The first three patients died, but the last three, owing to an improved method, all recovered. Colotomy had yielded him much greater satisfaction than it had Mr. Banks, but he much preferred to excise the rectum or part of the colon to adopting the palliative treatment of colotomy.—Mr. BANKS gave details of four cases of Gastrostomy, two of Gastro-Enterostomy, and seventeen of Colotomy. He had come to the determination not to perform gastrostomy any more, as the after condition of the patients was most deplorable. The cases suitable for pylorectomy seemed at present to be very rare. He entirely objected to the surgeons throwing upon the physicians the responsibility of their want of success because the latter did not hand over the cases sufficiently early. If it was difficult to get patients with cancer of the mouth and breast (which were visible and tangible) to come early enough, how much more difficult would it always be to get them to submit to operations when there was nothing to be seen or felt. He would, however, urge the more frequent performance of exploratory operations to determine whether anything could be done or not, these explorations being in his experience perfectly safe. The sole question at present about any one of the operations under discussion seemed to be whether it was anatomically possible, and what was the best technique to be employed, while too little regard was paid to the general condition of the patient and his power of resisting the shock of a severe operation, or to the possible value of the operation to him, even if successful. He thought it very unfortunate that in the present day surgeons seemed to bring forward only their brilliant and successful cases; the result was that the general medical public conceived a most erroneous view of the value of many surgical proceedings. He would be one of the last to throw any obstacle in the way of the advance of legitimate surgery, but he desired to put in a plea for more judgment and care in the selection of appropriate cases for the operations under discussion.

PLYMOUTH MEDICAL SOCIETY.—A clinical evening of the above society was held on Saturday, March 10th,

Mr. WHIPPLE, President, in the chair.—Dr. FOX brought forward: (1) a fisher-boy aged seventeen, the subject of Osteo-arthritis, the distal ends of the first phalanges exhibiting well-marked and symmetrical bony nodes; (2) a railway porter aged thirty-two, with Marked Wasting and Paresis of both upper extremities—four years ago he fell down "in a fit," was unconscious for two minutes and laid up for five weeks. He suffered much pain in the back of the neck and feet, and lost power in the left arm With the exception of some weakness in the left arm he was quite well twelve months later. After an attack of influenza eighteen months ago both arms became progressively weaker, and he has been unable to work for the past month. He has fibrillary twitchings in both forearms, and impaired temperature and tactile sensation. There is marked thickening and rigidity in the lower cervical spine. Dr. Fox thought it was a case of syringomyelia, while others attributed the progressive muscular atrophy to damage to the brachial plexuses, the result of his occupation.—Mr. C. E RUSSEL RENDLE showed (1) a girl aged eighteen, who for two years had noticed gradually increasing Proptosis of the Left Eyeball, with latterly pain in the left eye and both sides of the forehead and optic neuritis. On examination a hard, smooth nodule was to be felt opposite the inner canthus, and the left nostril was obstructed; it was considered to be probably a cartilaginous growth of the orbit. There was no history of phthisis, syphilis, cancer, or traumatism. (2) Mr. Rendle also showed a girl aged ten years, with Enormous Widening of the Nasal Bridge—now represented by a flat plate recalling the fronto-nasal process of the fœtus—and noticed since three weeks of age. Probably this was a cartilaginous tumour of the ethmoid —To celebrate the formation of the society a dinner will be held on the centenary date, April 11th. The society stands seventh in the list of British medical societies, there being six which were founded previously—viz, Edinburgh Royal Medical, 1737; Medical Society of London, 1773; Middlesex Hospital and Colchester Medical Societies, 1774; Edinburgh Harveian Society, 1782; and Aberdeen Medico-Chirurgical Society, 1789.

Reviews and Notices of Books.

A Treatise on Hygiene and Public Health. Edited by THOMAS STEVENSON, M.D., F.R.C.P., and SHIRLEY F. MURPHY, M.R.C.S. Vol. II. London: J. and A. Churchill. 1893.

[FOURTH NOTICE.]

UNDER the title of "The Natural History of Infectious Diseases" Mr. T. W. Thompson, one of the medical inspectors of the Local Government Board, contributes a thoughtful review of present knowledge as to the phenomena of epidemic and endemic diseases and their causes. In common with other recent writers upon this fascinating subject he discards the crude mechanical notion of absolute uniformity of type in specific diseases and recognises the possibility—which in some, at least, is now a demonstrated reality—of variation to which it is difficult to assign limits. Along many converging lines we seem to be at last approaching a solution of the long-vexed question of the *de novo* origin of specific diseases, the clue being furnished by applying to bacterial life the familiar principles of evolution. In the course of his really admirable essay Mr. Thompson deals with the principal zymotic diseases one by one, describing their habits and characters, negative as well as positive, and the extent to which these are liable to modification. Some, like measles, are unknown except as attacking man, and with regard to these we still have to seek the origin in an antecedent human case of the same kind. Others, like rabies, affect lower animals also, and here the etiological field is in that sense wider; others, again, are capable of infecting soil and artificial media as well as man and lower animals, being capable of saprophytic as well as parasitic existence. It is with regard to this class, which includes enteric fever and erysipelas, that much of the *de novo* controversy has arisen, and, as it now proves, not without justification, on both sides. If infection reaches man from a source remotely, if at all, connected with any previous human case, it is or is not an example of origin *de novo* according to the sense in which the term is used. Some few diseases are capable of epidemic diffusion by means of milk, others by water, and here, again, we have had to recognise that the infection of such media may perhaps sometimes be due to other sources than man.

Apart from this, however, there is another factor at work, which Mr. Thompson is careful to keep before his readers and makes abundantly clear. Pathogenic organisms are no longer assumed to be constant in their reaction upon the living body, even assuming the subject to be equally receptive. With regard to some of these organisms, which can be cultivated in artificial media or which affect lower animals, bacteriologists have found means of making them less or more malignant at will. Similarly, epidemiologists have found evidence of changes of type and changes of virulence in the course of many diseases: changes which are sometimes gradual and extended over long periods, sometimes rapid, and which are by no means confined to those diseases of which bacteriologists have succeeded in isolating the specific microbes. Familiar examples are to be found in the present mild type of scarlet fever as contrasted with the severer form prevalent twenty or thirty years ago, the intensification of small-pox in 1871-72, and the fluctuations in the virulence of diphtheria. It is not to be assumed, of course, that the only possible changes are those which affect the power of producing given symptoms in the host; on the contrary, these are but examples of the manifold functional modifications which may be looked for, and of which bacteriology already furnishes abundant instances. In seeking an explanation of the appearance of zymotic disease where no antecedent case can be traced one has therefore to consider, not only the possibility that the source may be other than human and even other than animal, but also the underlying possibility that the disease has entered upon a phase of greater activity, following a stage in which it was perhaps incapable of grafting itself upon man (and perhaps only incapable of giving rise to notable manifestations when so grafted). And yet, amid all the light which is dawning upon the revolutionary changes which bacteria undergo, every year brings fuller realisation of the profound importance of environment. Climate, season, atmospheric and telluric conditions, and the like have a deeper meaning for us than was in former time attributed to them, and much has been learned of late as to the influence of age and sex, occupation and surroundings, upon the reaction of individuals and multitudes to the germs of disease.

It is increasingly necessary for those who have to undertake the investigation of epidemic outbreaks to be armed with a knowledge of the habits of each disease and to know from what sources, by what channels, and under what conditions it may infect man. It is no light tribute to Mr. Thompson's monograph to say that he has succeeded better than any other writer with whose work we are acquainted in the English language in conveying a faithful picture of what is known of the epidemiology of each of the principal diseases of which he treats. His work will be invaluable to medical officers of health.

Squire's Companion to the British Pharmacopœia. Sixteenth Edition. Revised by PETER WYATT SQUIRE, F.L.S., F.C.S., and ALFRED HERBERT SQUIRE. London: J. and A. Churchill, 11, New Burlington-street. 1894.

No less than fifteen editions of this well-known and widely appreciated "Companion" have been exhausted since 1864—a fact which, coupled with the strides that have been made in pharmacy during the last few years, has necessitated the issue of the present edition (the sixteenth), upon the appearance of which both authors and publishers may be justly congratulated. It is considerably ahead of the average text-books and affords a valuable standard of reference to those who are anxious to keep pace with pharmaceutical advances, the allusions relating in

many instances to current literature bearing the date of the present year. In the paragraph on the alkaloid aconitine, for example, the authors advert to the comparatively recent research by Mr. Dunstan and others, who showed that nap-aconitine only constitutes one-third to one-quarter of the total alkaloid contained in *aconitum napellus*, the remainder consisting of (1) isa-aconitine—isomeric with aconitine—an uncrystallisable base forming crystallisable salts and non-toxic, comparable with those of aconitine; (2) aconine, identical with the saponification product of aconitine, non-crystallisable, and also non-toxic; and (3) one or two other amorphous alkaloids. It would appear desirable, therefore, that, as crystallised nap-aconitine is the only constituent which seems to possess in a highly intensified degree the properties ascribed to the aconite plant, the name "aconitine" should be applied to this compound only and in a condition of approximate purity. Of new matter there are some 120 pages in addition to the previous edition, and an important space has been very prudently economised by printing the index in double column, by which it is reduced to sixty pages. Thus in a great measure room has been found for the adequate treatment of recent advances. On page 18, for instance, there is an interesting account of the process by which benzoic acid is obtained from toluol (C_7H_8). The artificial acid so obtained is stated to be sublimed frequently over gum benzoin in order to give it something of the aromatic odour of the natural acid. The authors further state that the artificial acid conforms with most tests, but is practically certain to be contaminated with chlorine compounds, the detection of which is proof of the toluol source of the acid. The interesting observation of Dr. Lauder Brunton is added, that it is benzoic acid itself, and not uric acid, which is converted in the body into hippuric acid—a change which happens in the kidneys but not in the blood—so that any benefit derived from the use of the benzoates cannot be attributed to the change of *uric* into hippuric acid. Evidence of the exact physiological action of toluol benzoic acid as distinct from the natural acid (gum benzoin) appears to be wanting.

The importance of such a discrimination is more evident when the case of the related acid (salicylic) is considered, for it is well known that impurities have occurred in the acid made from phenol which have given rise to serious results. It is satisfactory, however, to find that a physiologically pure salicylic acid (p. 40) may now be obtained commercially. An excellent conspectus of the more or less definite principles in the alkaloid-yielding plants is an especial and admirable feature of the present edition, and amongst those that call for passing notice are the alkaloids or principles of digitalis, ergot, gelsemium, hyoscyamine, and physostigmine, while the recent contributions to our knowledge of the characters and tests of both paraldehyde and eucalyptus are of equal interest.

In view of the popularity of the latter body as a remedy and prophylactic in epidemic influenza, and of the stress that has been laid upon the "eucalyptol" contents of certain varieties in affording an estimate of their value, the opinion expressed by the authors that the value of both the "amygdaline" and "globulus" types is not to be ascribed to these constituents will come as a surprise to many chemists. On the whole, we have little adverse criticism to offer; but we should have liked to have seen included among the tests for impurities in chloroform the one suggested by Professor Ramsay, in which barium hydrate is used as the reagent; it produces when shaken with chloroform containing carbonyl chloride (which results from the action of light upon it) an instant turbidity ($BaCO_3$). Carbonyl chloride is an impurity which demands more attention than hitherto, since it has been demonstrated that when chloroform is purified by lime, which, like baryta, eliminates this body, its action would appear to be more certain. The Appendix contains a useful list of tests, both volumetric and gravimetric, for ascertaining the purity and strength of chemicals, as well as directions for the preparation of suitable reagents. This section is succeeded by an equally instructive chapter on the Spas of Europe, in which the composition of saline, aperient, chalybeate, and effervescing table-waters is given. The volume concludes with an excellent therapeutic classification of remedies.

We have quoted enough to show (and space precludes us from quoting instances of an equally interesting kind) how satisfactorily this favourite handbook maintains its standard; and the issue of the sixteenth edition of this work is an occasion which will be welcomed by practitioners and pharmacists alike, since the references are found to be trustworthy and fully on a level with the present position of pharmaceutical science, while the fact that many of the observations recorded are the outcome of practical work conducted in the authors' own laboratory very materially adds to its value. Finally, the plan of placing the index letters at the top of each page is proof of the authors' foresight in attending to a detail which, though small, greatly facilitates the work of reference.

Congenital Affections of the Heart. By GEORGE CARPENTER, M.D., M.R.C.P.Lond. London: John Bale & Sons. 1894.

FOR the use of students and practitioners the author of this work has utilised material met with in his out-patient clinique at the Evelina Hospital for Children in order to write a little volume on the above subject. The method Dr. Carpenter has adopted in treating a difficult theme commends itself to us, and the manner in which he has executed his task reveals careful consideration and is worthy of praise. Commencing with a short and lucid *résumé* of the embryology of the circulation and purposing to write a practical manual, he proceeds without delay to a consideration of the cardiac anomalies, commencing at the pulmonary artery and its orifice. In treating of patent ductus arteriosus he makes the interesting remark that it may in some instances be due to a transient atelectasis pulmonum at birth, the cause passing off and the effect remaining. In considering the etiology of congenital heart disease generally he maintains a judicious attitude, inasmuch as he does not appear to incline too much either to the fœtal endocarditic or developmental views of the subject. Both causes no doubt act alone or together in different cases. In writing of the interesting symptom of cyanosis Dr. Carpenter appears to attribute most influence to "insufficient aeration of blood from defective lung functions" and to give a subordinate place to congestion of the systemic veins. We cannot say that we are at one with him in this matter, for we incline more to the obstructive vascular theory (pulmonary and systemic) than he seems to do. We are convinced, however, that many views more or less allied on this subject are capable of reconciliation, and that had their authors had an opportunity of discussing the matter before publishing their opinions we are equally convinced that there would have been greater unanimity on this matter. The diagnosis of congenital heart disease from auscultatory sounds is proverbially difficult and uncertain, and the absence of any such signs in many cases need not surprise us when it is remembered that the obstructive cause of the disease, as we take it, is in many cases at a distance from the heart and not of a nature to cause bruit. Dr. Carpenter, however, mentions an interesting case of coarctation of the aorta some distance from the heart, which caused a loud murmur. In the matter of treatment we are somewhat surprised to observe the permission to use, rather than the positive recommendation of, "alcohol or chloroform." We have been under the impression that cyanotics tolerated these drugs with difficulty, and Dr. Carpenter's theory of the condition does not incline us to change our

opinion. In truth, little, we imagine, can be done in these cases beyond a gentle relief of congestion by mild purgation and the avoidance of mental excitement and physical exertion. The work is illustrated by two original microscopic sections of lung and may be commended as a very instructive study of a phase of heart disease which has rarely been more adequately treated.

Atlas of the Diseases of the Skin, in a Series of Illustrations from Original Drawings, with Descriptive Letterpress. By H. RADCLIFFE CROCKER, M.D., F.R.C.P., Physician to the Department for Diseases of the Skin, University College Hospital. Fasciculus II. Edinburgh and London: Young J. Pentland.

WITH praiseworthy promptitude, the second instalment of this excellent work was recently issued. It certainly maintains the high character borne by the first fasciculus and encourages the hope that the Atlas when complete will hold a very high position amongst works of its class. As in the first fasciculus, six plates are furnished illustrating lesions of varying character. Plate V. is one of the most useful and instructive. It depicts the early and later stages of the not uncommon condition (in children) of urticaria papulosa, which is frequently mistaken for scabies, an error that is naturally followed by a line of treatment not very appropriate for an urticarial affection. Plate LXI. contains three drawings of lupus. One exhibits an early stage of lupus vulgaris, and in the description of the case allusion is made to other manifestations of the disease on the same subject, and to photographs of the lesion under tuberculin treatment; we therefore suppose that these illustrations are to find a place in another plate. Another figure is a well-marked example of lupus of the face, especially involving the nose, whilst the third illustrates "lupus papillomatosus." The artist has hardly been successful in indicating the locality of this lesion, for no one could say, from the drawing alone, that it was seated on the left buttock. Plate LXVIII. also has three figures—viz., one of chronic scrofulous ulceration of the face, one of lupus verrucosus, and the third, which is undoubtedly the best, that of a striking example of verruca necrogenica, which involved all the knuckles of one hand. The subject was a post-mortem room attendant, and Dr. Crocker draws attention to the interesting fact, which has been verified by some continental observers, that these cases are often (? always) due to tuberculous inoculation. Tubercle bacilli have been found in the lesions. Plate LXXII. depicts a remarkable case of keloid, which shows well the cicatricial bands and dilated vessels so characteristic of this form. Plate LXXX. has one drawing of seborrhœic eczema of the scalp and vicinity, and another of palmar eczema; whilst Plate LXXXII. is an excellent illustration of the common condition—often mistaken for tinea versicolor—of seborrhœa papulosa *seu* lichenoides. The text to each plate seems to us to be quite in harmony with the character of the work, the author tersely describing the cases which it illustrates and denoting the lines of treatment pursued.

Analytical Records
FROM
THE LANCET LABORATORY.

INFANTS' FOODS.

(ALLEN AND HANBURYS, PLOUGH-COURT, LOMBARD-STREET, E.C.)

THE composition of these foods, judging from our analysis, is evidently based upon the conclusions arrived at after a close study of the physiological requirements of infant life in its various stages. No. 1 food, which is designated also as a first food for infants, is prepared from fresh and carefully selected cow's milk (the proximate composition of which has been first ascertained) by removing the excess of casein and adding sufficient cream fat, albumen, and milk sugar to bring up the quantities of these constituents to the required standard. The resulting food is then sterilised, concentrated in vacuo, and preserved in hermetically closed vessels. It gave on analysis the following results: moisture, 2·37 per cent.; mineral matter, in which phosphate of potassium was predominant, 4·75 per cent.; fat, 13·15 per cent.; nitrogenous bodies, 14·25 per cent.; dextrine and sugars, 65·48 per cent. No. 2 food, which is also called "mother's milk" food, is designed for infants quite young, and consists of No. 1 food with the addition of some maltose and a small proportion of dextrine with some soluble phosphates, resulting from the mashing of crushed whole wheat with barley malt. The food is finished by concentration in vacuo and is packed in close vessels. The subjoined results of analysis which we obtained were similar to the previous food, except that there is a manifest increase in the amount of dextrine and sugars, and a corresponding reduction in the fatty and nitrogenous constituents: moisture, 1·92 per cent.; mineral matter, 4·08 per cent.; fat, 12·48 per cent.; nitrogenous bodies, 12·50 per cent.; dextrine and sugars, 69·02 per cent. The composition of the "first food" is evidently founded upon the average analysis of a number of samples of human milk, which it resembles not only in regard to its behaviour with acids and rennet, but also in the proportion it contains of soluble albumens and fat. Both preparations were found to evince a digestive action upon starch, but insoluble starch itself was entirely absent. It is well known that malt diastase exerts a peculiar action upon casein, which prevents it curdling. The addition of a judicious proportion of active malt to the food is calculated, therefore, to obviate this as well as to ensure ease of digestion and assimilation. This plan, however, is adopted with cow's milk when it is intended to represent human milk for infant feeding, but, as has been pointed out, although the casein is thus rendered more digestible the excess in which it occurs remains unchanged, while the dilution obviously augments the normal and serious deficiency of fat, albumen, and milk sugar. Mere dilution of cow's milk cannot, therefore, afford a perfect substitute for the milk of the mother. The satisfactory solution of the problem can only be attempted when the difference in the amounts of constituents in cow's and human milk are first taken into account, and then by adopting a process which it is calculated will remove these differences or, at any rate, reduce them to insignificant proportions. Not only does it seem to us that this is exactly what Messrs. Allen and Hanburys have succeeded in doing, but what makes the product still more valuable and convenient is that it is in the form of dry powder and is sterilised. Not less satisfactory is the taste of these preparations, which is agreeably sweet and malty. We regard the introduction of both foods as a progressive step in infant dietaries of considerable importance and value.

LIQUID SULPHUROUS ACID IN CYLINDERS.

(A. BORKE, ROBERTS & CO., STRATFORD, E.)

It is well known that sulphurous acid gas (SO_2), when submitted to a pressure of three atmospheres, condenses to a clear, nearly colourless or slightly yellow liquid. On releasing the pressure the liquid gradually resumes the gaseous condition, and in doing so, of course, absorbs heat, and the cold produced may be utilised for freezing purposes. Liquid SO_2, however, has only comparatively recently been introduced as a manageable and portable article of trade, and this introduction is due to the above firm, who now supply it not only in syphons, but also in metal cylinders, containing twenty ounces or twelve ounces each. The cylinders are provided with a short leaden pipe, closed by flattening at the end. On cutting off this pipe smartly with a sharp penknife a rapid disengagement of SO_2 gas takes place at first, which, however, is soon checked by the frost which forms on the orifice, but by placing the cylinder with the pipe downwards the pressure will expel the liquid, which may then be poured

into a dish and allowed to evaporate—a process which, under these conditions, occupies fifteen minutes; but if the liquid is allowed to evaporate from the cylinder it takes from three to four hours to fully escape. The adoption of this method for the disinfection of rooms &c. seems to us to meet entirely the objection which has been urged against the time-honoured system of burning sulphur—that is, that the heat involved in the combustion carries the gas immediately upwards, whereas the gas escaping from the cylinder is at a low temperature, so that it would instantly reach the floor and furniture of the room, where probably its application is most required, and would finally be diffused into every nook and corner. While we concede that the application of liquid SO_2 in the manner described is certainly more convenient and rapid, and probably more effective for all purposes of disinfection, yet we must point out that it requires handling with much greater care. For disinfection on a large scale, as in hospital wards, holds of ships, cattle pens, mortuaries, &c., it is calculated to serve admirably.

VARIOUS MALT WINES.

(TUKE AND JAMIESON, 2, LOMBARD-STREET, E.C.)

The results of analysis of these wines will be regarded with interest, since they are produced not from the grape, but from malt. Briefly the process consists in subjecting rich malt wort, obtained in the usual way from malt and water, to a pure lactic acid fermentation at 50° C., subsequently submitting the liquid to a high fermentation with purely raised wine yeast of a special kind, with the occasional addition of cane sugar, after which it is stored for some time at a temperature of 50° C. while left in contact with atmospheric air. The lactic fermentation is induced in order to provide the energetic fermentation against subsidiary fermentation, much in the same way as hops are used in beer; while the character of the aroma and taste of the wine is determined by the selection of yeast. The strong malt flavour and aroma existing after the completion of the fermentation in the fiery sweet beverage, which has a vinous odour (due to the selected yeast), disappear, it is stated, on storage in contact with air or oxygen. Dr. Fresenius has analysed and reported upon several kinds of the wine thus produced, and the results are substantially in accordance with our own. Thus, the results obtained in THE LANCET Laboratory were as follows:—Malzwein tokayers: alcohol, by weight 10·62 per cent., by volume 13·15 per cent.; extractives, 27·18 per cent.; mineral matter containing an abundance of phosphates, 0·46 per cent. Malzwein madeira: alcohol, by weight 13·85 per cent., by volume 17·08 per cent.; extractives, 14·60 per cent.; mineral matter, containing phosphates, 6·21 per cent. Malzwein malaga: alcohol, by weight 12·15 per cent., by volume 15·02 per cent.; extractives, 21·04 per cent.; mineral matter, largely phosphates, 0·25 per cent. Malzwein sherry: alcohol, by weight 13·62 per cent., by volume 16·80 per cent.; extractives, 12·10 per cent.; ash, 0·08 per cent. Malzwein cognac: alcohol, by weight 36·69 per cent., by volume, 39·25 per cent., equal to 68·79 per cent. proof spirit; extractives, 2·37 per cent.; mineral matter, 0·01 per cent. It will be seen therefore that by merely varying the yeast, wines of varying character such as sherry, madeira, malaga, and tokay may be produced. These malt wines correspond closely with the sweet wines of the grape, both as regards alcoholic and sugary constituents; they are sweet and agreeable to the taste, in which properties they resemble to a remarkable degree the proper grape product. They differ from the latter inasmuch as they contain dextrine and the extractives of malt, while, of course, they lack the peculiar extractive principles of the grape (tartrates and glucose, &c.). The wines are, therefore, comparable to grape wines in regard to their stimulating value, estimated according to the alcoholic strength; but there is reason for concluding that they are of additional value, since their stimulating effect will be exerted in the presence of the nourishing extractives of malt, which include nitrogenous constituents, dextrine as well as phosphates. We cannot regard the specimen of cognac, however, in the light of a palatable success.

TEA FOR INVALIDS.

(THE UNITED KINGDOM TEA COMPANY, 21, MINCING-LANE, E.C.)

Below are the results of an analysis of an infusion of this tea compared with an ordinary household tea, the proportion of leaves to water in both cases being the same (one teaspoonful in 10 oz. or a breakfast-cupful of boiling water), while the time of steeping—viz., five minutes—was also identical.

	Tannin. Grs.	Theine. Grs.	Extract. Grs.
Ordinary household tea	2·39	1·85	16·35
United Kingdom invalid tea ...	1·23	1·82	12·65

It is evident from these results that while the proportion of theine is practically equal, the amount of tannin in the breakfast-cupful of the special tea is very considerably less. This confirms exactly the impression conveyed to the palate, for the infusion is soft, leafy, and fragrant to the taste and devoid of that astringency which marks and mars the infusion of ordinary tea as it is commonly made. Nevertheless, clear evidence was gained of the perfectly genuine nature of the sample. With these facts before us we can take no exception to the claim that this tea is well suited for invalid use so long as it continues to yield results of the kind indicated, though the evil influence of tannin in tea as a producer of dyspepsia has possibly been overrated. Meantime it would be interesting to learn how such a variation in the composition of the leaf is obtained, or by what means so satisfactory a relation of tannin to theine in the leaf—that is, a minimum of the former and a maximum of the latter—is effected.

STARCHLESS BISCUITS—NE FAR BRAND.

(CLARK'S BREAD COMPANY, LIMITED, BRIGHTON.)

We have on a previous occasion reported the results of our examination of starchless biscuits made by this firm, but some attention has since been given to the manufacture of the starchless biscuit with a view to effect an improvement not in its composition (for a recent analysis shows little departure from that already published), but in taste, texture, and appearance. The biscuits which we have recently examined give ample evidence that the improvements in the direction indicated have been accomplished with marked success. The biscuits vie even with the high-class ordinary biscuit in regard to palatability and crispness, in spite of which only the smallest possible quantity of starch could be detected by the iodine test when half a biscuit was boiled in water. The preparations are therefore not only suited to the dietetic requirements of the diabetic, but are such as will appeal also to the eye and the palate. These things considered, we are entitled to speak of the biscuits with praise.

GLASS-LINED AERATED WATER SYPHONS.

(THE GLASS-LINED SYPHON COMPANY, LIMITED, 183A, ST. JOHN-STREET-ROAD, E.C.)

It was shown in the report of THE LANCET Special Analytical Commission on Mineral Water Machinery and Metallic Contamination[1] that water impregnated with CO_2 gas exerted a distinct, and in some cases considerable, action upon various metals (notably copper, zinc, iron and lead), but that tin was little affected, even on prolonged exposure. Especial attention, therefore, has been paid to the metal used in the construction of the tap and head of the convenient soda water syphon and seltzogene. As the name of the above company implies, however, syphons are now made at their works in which the metal fittings are lined with glass. This device is admirable so long as the glass effectually protects the metal at every point from contact with the aerated liquid. So far as we have been able to judge from specimens of the syphon heads submitted to us, the lining seems to be effectively laid, but as a matter of fact we found traces of copper in the soda water, which, however, was probably derived from the copper vessel or connexions used in the aerating process.

[1] THE LANCET, Jan. 7th, 1893.

THE LANCET.

LONDON: SATURDAY, MARCH 24, 1894.

THE programme of the newly established Society of Fellows of the Royal College of Surgeons of England, which will be found on page 761, is one which does not appear likely to result in anything of a very novel, and certainly in nothing of a revolutionary, character. The more discussion that takes place upon the affairs and management of the College the better, as the path of reform may thereby be smoothed, and those Fellows who have hitherto exhibited but little interest in College politics and who are not very well acquainted with the Charters and By-laws may receive the rudiments of political education. That this is not altogether unnecessary even in the provisional executive committee of the Society of Fellows is shown by the second of the three fundamental articles of the Society, which speaks of obtaining a new Charter to deal more effectually with cases of professional misconduct. If the provisional executive committee will refer to the College Calender, it will be seen that cases of misconduct are dealt with by Section XVI. of the By-laws, which the Council have been recently engaged in amending for the purpose set forth in the second article, and with the intention of applying to the Secretary of State for the Home Department for his sanction to the alteration.[1] A previous application for the alteration of Section XVI. of the By-laws was made in 1889, but the then Secretary of State would not give his approval to any extension of the powers conferred by the Section. It will be seen, therefore, that no new Charter is needed for this purpose, and it must be candidly stated that if the provisional committee do not see any other necessity for a new Charter than the one mentioned, the career of the Society of Fellows as a reforming and revivifying organisation is not likely to be very long or very distinguished.

It may, however, be reasonably anticipated that the majority of the Fellows by whose opinions the executive council intends to be guided will be a source of light and leading to the directors of the present movement so far as reform is concerned. Reform will probably not prove the strongest point in the new society. Organisation is likely to be stronger. It was "felt at the meeting that inasmuch as it would be unfair to expect any large or frequent attendance of Fellows from the country at meetings in London, it would be well to conduct the business of the society, if such were formed, by means of a central London executive and of branch executive committees in various parts of the country. It was thought that in this way the views of the general body of Fellows would be best arrived at, for while the London executive would be in frequent communication with the various provincial branches, these in their turn would be in touch with the Fellows in their own immediate district." If the programme of the association had ended here we should have regarded the newly formed Society of Fellows rather in the light of a useful debating society, and should have felt that something was wanted to explain the active interest taken in its formation by the busy and distinguished Fellows connected with the medical schools who are promoting it. The next sentence, however, like the onion atoms lurking, scarce suspected, within the bowl in SYDNEY SMITH'S celebrated salad, animates the whole circular and removes all obscurity as to the purpose of the society. It runs as follows: "And by this means, also, it was hoped and expected that the general body of Fellows would be enabled to form an opinion as to the suitability of candidates to represent them upon the Council, and so the risk would be avoided of candidates becoming the mere nominees of small committees which without having any truly representative character, might tend to influence and in the end control elections to the Council by methods akin to those of the political caucus of the day." This surely must be intended for an attack upon the Association of Fellows, to whose efforts, unaided in any way by vested interests and supported by independent Fellows, the Fellows of the College are indebted for securing from the Council the privilege of being called together at the College separately from the Members, as well as other concessions.

The provisional executive committee clearly shows that one of the main objects of the Society is to secure the election of "suitable candidates" to represent the Fellows on the Council. We do not object to organisations for this purpose. We think that they are perfectly legitimate, for the only way in which reforms can possibly be obtained at the College is for the reforming Fellows to combine to elect reforming candidates on the Council of the College, and the only way to influence opinion in a scattered constituency like the Fellows of the College is to issue circulars containing matured proposals of reform supported by "well-digested" arguments — as the Association of Fellows has already done in a perfectly proper and legitimate way. If the Society of Fellows does not itself employ any methods more akin to those of the caucus than the Association of Fellows there will be no reason to complain, and we regret that a society which avows its intention to pull the wires in the provinces in favour of suitable candidates should go out of its way to cast a stone at an association which has fought for ten years, and in the tenth gained so striking a success at the College elections that the Council of the College has at once proceeded to organise meetings of Fellows at the College, without which the new society would not have arisen. The fact really is that the election of four liberal candidates at the Council of the College last July, which was due, we think we may fairly claim, as much to THE LANCET as to the Association, came as a surprise to the conservative element in the Council and to the staffs of medical schools, the members of which have not wished, from a natural fear of losing appointments at the College, to join the association, even when sympathising with its views and efforts. Naturally, therefore, the conservatives and the defeated candidates have regarded with dismay the fancied prospect that the Association of Fellows aims at an entire control over the College elections, and are desirous to promote a counter organisation. This appears to us to be the germ out of which the new Society has been hatched, but, whatever may have been the originating motive, we shall rejoice if the Society is able to show in the course of time as excellent

[1] Vide THE LANCET, Feb. 10th, p. 376, and March 10th, p. 647.

a record of improvements effected at the College as the Association of Fellows in whose mantle the Society appears desirous to invest itself without acknowledgment. We shall watch with interest the progress of the movement.

IN the series of Goulstonian Lectures on the Physics of the Circulation concluded in the last issue of THE LANCET Dr. CHAPMAN has very ably handled a very difficult subject. It only requires a superficial knowledge of the industry manifested in this department of research in the laboratories of Europe to appreciate the amount of material which has to be acquired and considered before the winnowed grain of so large a harvest can be placed before the profession. Dr. CHAPMAN'S task has not been an easy one, and we are glad to express our opinion of the able manner in which he has performed it. That our readers may have an opportunity of weighing his facts and arguments at leisure with the care which they deserve and require we have published the lectures *in extenso*.

Otherwise put, the theme might have been termed a plea for the use of the combined graphic method in the investigation of circulatory phenomena, with special reference to its use in clinical medicine. The lecturer is one of those who believe that there are cases in which a correct diagnosis can only be reached by this means, and regrets that it has been so little used by physicians in practice. The sphygmograph, he remarks, has largely fallen into disuse and the cardiograph has practically never been used. He suggests that among the causes of this fact we must number some reluctance on the part of physicians to take the necessary trouble, together, in some instances, with too exalted an idea of the influence of individuality in procuring professional success and too high a notion of the importance of unaided observation. That these considerations may in some cases have some weight we are not disposed to deny, but they do not appear to us sufficient to account for the practical neglect of any means of physical examination which has been proved to be of real value. We feel inclined, for our part, to believe that before such methods can be expected to be universally adopted there must be greater unanimity among the physiologists and physicians who recommend them as to the indubitable significance of the tracings and portions of tracings which are so obtained. Thus Dr. CHAPMAN is inclined to believe that the cardiogram is to some extent indicative of intra-ventricular pressure, while VON FREY thinks otherwise. Again, with regard to the meaning of the important dicrotic wave observed on the sphygmogram there is a still unsettled difference of opinion among physiologists, some affirming, while others deny, the influence of waves reflected from the periphery to the centre. Nor are the means adopted to solve the problem always such as carry conviction. Thus the behaviour of the bloodvessels after the removal of the heart and lungs appears to us little more reliable as evidence than deductions drawn from schematic experiments, in which TIGERSTEDT puts little faith. We make these remarks in no depreciatory spirit, for some, if not altogether incontrovertible, information may, we believe, be gained even by these means, however much the conditions may differ from the normal cardio-vascular state. The readiness with which the profession at large adopts innovations or fresh discoveries of unquestionable value gives some force to our remarks, and we doubt not that when the graphic method has been placed upon as secure a basis as the theory and practice of auscultation and percussion it will enjoy a like favour with these. Nor need we be surprised that it is more slow in asserting its importance, for such slowness is inseparable from its greater complexity. Important strides have, however, been made in the right direction. We know now to a certain extent what the graphic method cannot do. Thus, while revealing the *course* of pressure in an artery, the sphygmograph gives no precise indication of its *amount*, and Dr. CHAPMAN himself remarks that this is perhaps only to be obtained by manometrical observations in the physiological laboratory. To facilitate *time* calculations, which are so important in this mode of examination, valuable tables are given of the duration of phases of cardiac action and calculations of some portions of such phases. The labour involved in obtaining these tables and the care manifested in their preparation cannot be too highly commended. This is work, naturally, which, without the graphic method, would be impossible. The most notable advance in this method has been the simultaneous employment of the chronograph. Dr. CHAPMAN describes a very convenient form of this instrument, in which a harmonium reed is adapted for this purpose, the pitch being a low C, vibrating sixty-four times a minute and giving measurements of $\frac{1}{128}$th of a second. By this means, whatever difference of opinion there may be concerning the meaning of a wave or portion of a wave, there can be none concerning its duration. The determination of this point is of practica importance. In the experimental and diagrammatic tables of the duration of systole and diastole referred to we have important and reliable information as to the relative duration of these actions one to another and to pulse frequency determined in the ordinary way or by instrument. The practical importance of the determination of these points is, moreover, enhanced by the now generally admitted fact of active diastolic aspiration by the heart, a subject of growing interest which the reader will find more fully treated in the second lecture. Regarding the value of the graphic method from a practical—that is, a clinical—point of view everything depends upon the answer which can be given to the question, Does it afford useful information not otherwise attainable? Dr. CHAPMAN and other advocates of the method of course answer this question in the affirmative, and that there are occasions upon which this is most probably the case we also think. There is no better example of this than that to which the lecturer especially draws attention—namely, the influence of aneurysm in modifying the tracing. As he remarks, "Delay affecting any artery may be an important step towards the localisation of a presumable aneurysm in a part beyond the reach of direct observation." He also cogently adds, "I think, for those who require some immediate proof of practical use from any study, this should give the combined use of the sphygmograph and cardiograph a distinct claim on their attention." From experience we believe with him that the otherwise unsuspected presence of aneurysm complicating aortic reflux may be thus manifested and even its situation reasonably surmised by cardiography combined with right and left sphygmography. This can, of course, also be done in some cases by observation of the pulse in the ordinary manner, but, from the varying position of the arteries, we are disposed to regard

the graphic method as more reliable in many such cases. In connexion with the clinical aspect of the question Dr. CHAPMAN'S remarks in the third lecture are both interesting and judicious and will repay study. While he says as much as he can in favour of the graphic method, he criticises with judgment the somewhat enthusiastic assertions of the late Dr. KEYT of Cincinnati, to whom he also pays a high tribute of praise. He is disposed to regard with Dr. KEYT, as "one of the triumphs of the graphic method," the establishment of the proposition that the "præsphygmic interval is abnormally shortened in free aortic insufficiency"—that is, that the time measurement of points on a base line corresponding to the bottom and top of the ventricular upstroke in the cardiogram is notably less in these cases. By this means the lecturer himself succeeded in diagnosing an aortic lesion the bruit of which was only heard at the heart's apex and which was so obscured by lung sounds as to leave him otherwise in doubt whether he had not to deal with mitral disease. The præsphygmic interval may, however, he admits, be shortened from other causes, and to Dr. KEYT'S opposite contention that this interval is lengthened in harmful mitral regurgitation he is not at present prepared to assent.

In the interests of the graphic method it is, moreover, of the first importance that the disturbing element of movements due to the inertia of intervening media should be reduced to the lowest point. For this reason Dr. CHAPMAN prefers air to water in the transmission sphygmograph, because, although the amplitude of the writing thus obtained is less, such ambiguous movements are thereby to a great extent avoided. It is therefore, on the whole, we think, manifest that, until cardiography, sphygmography, and sphygmomanometry are, by the utmost care in all such particulars, placed upon such a basis that the elements in the tracing have a definite and indubitable significance, and until functional and other causes giving rise to like tracings with those of more serious disease are capable of elimination, other approved methods will be more trusted than the graphic. Dr. CHAPMAN'S lectures are, however, an able effort towards this end and will direct the attention of the profession with renewed interest to the subject. In conclusion, if we may be permitted to borrow a metaphor from the physiological laboratory, we should say that the curve representing the general admission by the profession of the utility of the graphic method will be proportionate to another representing the unanimity of the advocates of that method as regards the significance of the individual factors which compose a heart or pulse reading. Such a consummation we regard as both possible and probable, though as yet not reached. It is one, moreover, in no way inimical to the simultaneous cultivation of prevalent methods by touch and hearing, to which it can but add in some measure the aid afforded by sight. If the latter sense in this sphere of observation does as much for the physical diagnosis of vascular lesions and disturbances as the former have already done, its advocates will have every reason to be satisfied and need fear no lack of appreciation from the profession.

MR CAMPBELL-BANNERMAN in the annual statement introducing the Army Estimates not only went over ground which is of general—that is, of national—interest, but he also touched upon several matters which have a more or less special interest for members of the public medical services and the medical profession generally. If the War Minister had nothing particularly new or startling to announce, he was nevertheless able to deliver himself of a sound, practical and business-like commentary on the Army Estimates for 1894–95. Radicals and members of the peace party cannot, of course, altogether approve of an increase in the Army Estimates; but whatever Government may be in power the Secretary of State for the time being annually finds himself face to face with responsibilities that cannot be set aside. The estimates for 1894–95 stand at £18,081,000, being an increase of £278,100 on those of last year. The total number of effectives (including India) on Jan. 1st was 219,400, being 2301 in excess of establishment. After paying a well-merited compliment to the late Mr. STANHOPE, Mr. CAMPBELL-BANNERMAN went on to describe the aim and object of the system and policy that had been adopted and followed within the last twenty years, and adverted to the changes rendered necessary by the advances which military science and army organisation had made of late years. With regard to the movable force of 80,000 men, or two army corps, which it is deemed advisable to maintain in this country, we should be glad to feel assured that each fighting unit really has its fixed complement of stores ready for use at the proper places, and that on mobilisation for war everything would be found ready as regards men and material, that there was an abundant medical reserve of stores, and that the medical service, as a whole, was thoroughly familiar with the equipment to be used, and had been trained and exercised in all the functions its members would have to perform in the field. In the meantime we are glad to have Mr. CAMPBELL-BANNERMAN'S assurance that a scheme has been elaborated and will be carried into effect for the practical training this summer of the medical staff and Medical Staff Corps at Aldershot and the Curragh in the duties they will have to perform in war. We must wait, however, to see how far this intention is to be carried out in practice. It will be interesting to note what arrangements are made for providing bearer companies and transport with water-carts, &c., for field ambulance work. The other points of more immediate interest to the medical service are those in which the War Minister referred to the recruiting, the sanitary and health condition of the army, the entrance examination for officers, and the condition of the military colleges. As regards recruiting all the men that are required are obtained. Last year there were 25,788 recruits enlisted, and something has been achieved in the reduction of the number of special enlistments—that is, enlistment of men under the regulation standard. The best advertisement which the army can have is undoubtedly the contentment of the soldier, and the War Minister declared that the authorities were doing all they could steadily and generally to increase that contentment, and he pointed in evidence of their success to the considerable falling off which had taken place in the number of discharges by purchase during last year. Parenthetically we may say that to our minds the speech which Sir REDVERS BULLER, the Adjutant-General of the Army,

lately delivered to the cadets at Woolwich was both wise and expedient in spirit and true in fact. He pointed out that military discipline—which he likened to the spinal cord in the vertebrate organism, an injury to which weakened or paralysed all the members of the body—could no longer be maintained by fear alone, but by the development of a spirit of confidence and sympathy.

As to the health of the army, Mr. CAMPBELL-BANNERMAN gave a most satisfactory report, and alluded to all that had been done for soldiers of late years, more particularly under the initiative of his predecessor. He specially cited, by way of illustration, the new barrack accommodation provided for the troops at Aldershot. There is no doubt that the improvements which have been effected at that station have been very great, and that what has been done for the increased comfort of the soldier in other respects also has not been without its effect on the conduct and well-being of the force stationed there; but there is no finality in barrack construction and hygiene, and good as the buildings are, taken as a type, improvements in detail, or even in design, will suggest themselves from time to time as new barracks are built. While upon the subject of the health of the troops we wish that we could point to a decided and marked improvement with regard to one source of inefficiency. The disablement of our soldiers from venereal disease is largely in excess of that of continental armies, in which measures are taken to limit the spread of this particular class of contagion.

Speaking of the education of officers for the army, the Secretary of State declared that "brain and nerve are what we require, and we should encourage them in whomsoever they are found." Surely for a profession like that of arms another quality is also necessary—physique. We hope that the day may come when a competitive examination will be competitive all round, and that the possessor of superior physical qualities and robust health will score something on that account; for, as it is at present, the country loses a great many young fellows who would make most capable officers by limiting the tests to "brain and nerve"—intellectual acquirements—which are, after all, uncertain tests, and in themselves afford no indication of character or special fitness for the actual functions and practical duties of military life. The publication of the report of the committee on the subject of these entrance examinations and the education of officers is awaited with much interest. With regard to what Mr. CAMPBELL-BANNERMAN had to say about diminishing the expenses of army life most people are cordially in accord with him; from start to finish, from the military colleges onwards, the cost of living in the army, now that the service no longer taps exclusively the richer classes, is too great.

Annotations.

"Ne quid nimis."

THE PRESIDENCY OF THE ROYAL COLLEGE OF PHYSICIANS.

AFTER the transaction of the routine business at last Monday's meeting of the Royal College of Physicians, the retiring President, Dr. Russell Reynolds, delivered the address customary on these occasions. In it he reviewed the position of the College and gave a succinct account of the proceedings of the past year. There are now on the rolls 298 Fellows, 480 Members, and 5396 Licentiates, there having died during the past year 8 Fellows, 8 Members, and 35 Licentiates. The address referred in the first place to the transactions of the College with respect to the Army Medical Department, and to the General Medical Council; allusion was also made to the changes introduced into the curriculum for the examinations of the examining board in England—viz., the transference of pharmacology to the third examination; the requirements of the Colleges as regards practical instruction in medicine, surgery, and midwifery; and the practical examination in chemistry. The Jenks Memorial Scholarship had been established during the year, the holders being preferably selected from among those who had been educated at Epsom College. The President then referred to the lectures delivered during the past year, to the regulations for the Membership Examination, and alluded with satisfaction to the honours that had been conferred on Sir W. Broadbent, Sir W. O. Priestley, and Sir B. W. Richardson. The concluding part of his address consisted of obituary notices of the eight deceased Fellows—viz., Dr. Wegg, Dr. Prance, Dr. Myers, Dr. Hitchman, Dr. Grally Hewitt, Dr. Hadden, Dr. Edis, and Sir Andrew Clark. The tribute paid to the memory of his distinguished predecessor was couched in graceful terms, and the sketch of his career was notable for its discrimination and for the appreciation of the character of the late President. The Fellows must have felt that the life-work of their active and energetic leader could hardly have been more ably, justly, or eloquently reviewed. At the close of the address the ballot for President took place, when it was found that 87 out of 89 votes had been cast for Dr. Russell Reynolds, who was thereupon inducted into the office.

THE COMPOSITION OF SEWER AIR.

MR. J. PARRY LAWS, F.I.C., has presented to the main drainage committee of the London County Council two reports embodying the results of his investigations, undertaken at their instance, on the composition of sewer air. He refers briefly to the experiments on the same subject conducted by Dr. Carnelly and Dr. Haldane, whose observations were made in the main sewer of Westminster Palace and in various sewers in Dundee. Their conclusions were that the air of sewers was much better than might have been expected; that the proportion of carbonic acid gas in sewer air was about twice, and that of organic matter about three times that in the outside air; that the number of micro-organisms was less in sewer air than in the outside air at the same time; that, as regards the impurities just mentioned, the air of sewers was in a much better condition than the air of naturally ventilated schools, and, except as regards the organic matter, in a better state than that of mechanically ventilated schools; and, finally, that sewer air contained a much smaller number of micro-organisms than the air in any class of house on which they had experimented. Mr. Parry Laws made his observations on the King's Scholars' Pond Sewer, which runs from Piccadilly to Buckingham Palace-road under the Green Park. He found that the micro-organisms of sewer air are related to the micro-organisms in the air outside, and not to those in the sewage. In the air, both within and outside the sewer, the forms of micro-organisms present are almost entirely moulds and micrococci, whereas, on the contrary, the micro-organisms of sewage are for the most part bacilli. Mr. Laws is of opinion that, in the absence of violent splashing, there is little or no reason to think that the micro-organisms of sewage become disseminated in the sewer air. In a further series of experiments the conclusions already arrived at were confirmed. He also investigated the question as to whether an increase in the velocity of

the air current through the sewer affected the number of micro-organisms found in the sewer air; it was found that a considerable increase in the velocity of the air current did not produce an increase in the number of micro-organisms found in the sewer air. He also found that the results of experiments on large sewers hold good for small sewers. In regard to the actual kinds of micro-organisms in sewer air, Mr. Laws supplies a table of those he identified. It is, he considers, specially noteworthy that two organisms present in sewage in large numbers—the bacillus coli communis and the micrococcus ureæ—were not found in sewer air; and he notes the fact that organisms capable of liquefying gelatine were also almost entirely absent. It is remarkable that all the micro-organisms found in sewer air belonged to the non-pathogenic class. It will be seen that Mr. Laws's observations tend to show that the organisms found in sewer air probably do not constitute a source of danger to the health of human beings. He admits, however, that the evidence of sewer air having some causal relation to disease cannot be ignored, and suggests the possibility that the danger of sewer air may be indirect; that, for instance, it may contain some poisonous chemical substance capable of producing serious effects in the presence of a large excess of carbonic acid.

VOICE PRODUCTION.

THE Council of the British Medical Association have lately directed a certain "Memorial on Voice Training" to be forwarded to public schools, universities, and other public institutions, at the instigation of the Section of Laryngology at the meeting of the Association at Nottingham last year. One unfortunate consequence of this is that the memorial is being largely used as an advertisement by the practitioners of a remarkable form of quackery, who, however, so far believe in themselves and their work that each is mainly intent on teaching the only method of the old Italian school of singing, and denying that his fellow worker has any claim to similar privileges. Even we are favoured with communications from professors of elocution, &c., teeming with remarkable scientific justifications for their systems. They instruct us how people should be taught to speak and sing by means of physiology, amplified with theories evolved from the professors' own vocal experiences. As soon would one teach a boy to run with the help of an anatomical text-book! We cannot refrain from quoting a text-book on elocution recently placed in our hands:—"Physiologists tell us that those ventricles [of the larynx] communicate with the brain ..... and they communicate with the spinal cord, and have for their function the expansion and condensation of air!". Far be it from us to deprecate the proper training of the voice in all, whether likely to become professional voice-users or not. Nothing will tend so surely to the preservation of the beauties of the language. But we would affirm that correct production is to be taught on common-sense principles, such as using the lungs and making the lips, tongue, and teeth bear the onus of articulation. Teach the boys and girls to read aloud as was done in our parents' days, and they will not need voice-trainers when they grow up. Speech is common-sense science, thanks to the teachings of Graham Bell, Alexander Ellis, and others. Song is a pure art, which science has as yet failed to demonstrate. Yet what matter when every singing master knows all about it, and that every other master is wrong.

THE LIFE-SAVING SOCIETY.

IN less than one month of the summer of last year over 400 verdicts of "accidentally drowned" were recorded in England alone, and the annual loss of life in the United Kingdom attributable to this cause is over 6000. Under these circumstances a society that has for its object the promotion of technical education in life-saving and resuscitation of the apparently drowned should receive the cordial support of the public. The Life Saving Society, of which the Duke of York, K.G., is honorary president, was established in 1891 with this main object in view, and the annual report for 1892–93 is a most satisfactory one. The society has made every effort to induce schools, swimming clubs, athletic clubs, the police, her Majesty's forces, and the public generally to make the subject of life-saving one of paramount importance and to widely disseminate a knowledge which at any moment may prove of inestimable value; and various national institutions and organised societies, not only throughout the United Kingdom, but also in India, Australia, and New Zealand, have recognised the praiseworthy aims and objects of the society. The illustrated poster containing detailed instruction for the rescue and resuscitation of the apparently drowned, issued by the society, ought to be exhibited in every public place of the English-speaking world, and the admirable practical handbook on the methods of rescue, release, and resuscitation drills should be in the hands of every lover of the useful art of natation. The report, which contains valuable information respecting the formation of classes, particulars of the national life-saving competition for 1894, &c., can be obtained at the offices of the society, 3, Clarendon-square, London, N.W.

EPILEPSY AND ERRORS OF REFRACTION.

THE paper on this subject by Mr. Work Dodd recently read before the Ophthalmological Society, and which subsequently appeared in the winter number of *Brain*, is of such importance and suggestiveness as to deserve more than the passing notice which it has already received at our hands.[1] Briefly stated, it may be said to be a plea for the carefu examination of the refraction in all cases of epilepsy and the prescription of suitable glasses in the cases in which considerable error is present. The plea is founded upon the results obtained by Mr. Work Dodd in 100 cases of epilepsy in which the plan has been followed. Precautions seem to have been taken to obtain a physician's diagnosis in each case, but even with such precaution it might have been well to furnish some particulars as to the characters of the fits themselves, especially with reference to the important diagnostic signs of tongue-biting and relaxation of sphincters in order that readers might see for themselves that the patients were really suffering from epilepsy. Everyone who has much experience of "fits" knows what an extremely difficult thing it is in certain cases to say whether they are epileptic or hysteroid, and for the purposes of such an inquiry as this it would have been desirable to see that no doubtful case had crept in. We have raised this point, not in any spirit of carping or unnecessary criticism, but because it behoves us, in circumstances in which the issues are so important, to point out not only the strong points of the case but also its weaknesses. Granting, however, that Mr. Work Dodd's 100 patients were epileptics, he has at least clearly indicated some interesting points in which they differ as regards their refraction from normal individuals. Thus, in 50 "normal" patients it was found that 6 per cent. were emmetropic, 70 per cent. simply hypermetropic, 2 per cent. simply myopic, 16 per cent. astigmatic, while 6 per cent. suffered from other errors of refraction. In the 100 epileptics, on the other hand, the corresponding percentages were 7, 42, 6, 42, and 3. The prominent points brought out in comparing these numbers are: (1) that among epileptics hypermetropia is present in 20 cases per cent. less than among normal individuals, and (2) that astigmatism of all kinds occurs in 26 cases per cent. more of epileptics. These, it will be seen so far as numbers are concerned, practically compensate each other, so that refractive errors do not seem to be more common among epileptics than others, but only to be

[1] THE LANCET. Feb. 17th, 1894.

different in kind and perhaps in degree. It is scarcely likely that if a larger number of normal individuals were examined this difference would be materially altered, so that we may accept as a fact the statement that epileptics differ in the character of their refractive errors from other people. Such an admission, of course, makes it easier for us to suppose that treatment which is directed to the correction of these errors may reasonably be expected to meet with a certain measure of success. But when we come to consider the cases recorded in the paper, more especially with reference to the results of the treatment adopted, we have to point out the grave fallacy implied in regarding the improvement which followed the fitting of the patients with glasses as due entirely to the correction, for in every case which so improved, as we understand the record, ordinary medical treatment, by which we are presumably to understand drugs, dieting, and the like, continued to be applied to the patients. To admit that all the good done was the result of the wearing of glasses is certainly to go a considerable step further than the facts justify us in going. Such an admission would imply that ordinary medical treatment is insufficient to arrest or even to diminish the number of fits in cases of epilepsy, and this we feel sure no one, and least of those who have most experience of epilepsy, would be prepared to admit. There is probably no disease in which in the majority of its victims the result of medicinal treatment is at once so obvious and so gratifying as in cases of so-called idiopathic epilepsy, and it is indeed matter for surprise that among Mr. Work Dodd's cases such a small number as 13 per cent. only should have remained free from fits, even with medicinal treatment alone. We notice in the large table which is incorporated in the paper that a considerable number were either not ordered glasses or did not wear them, and it would have been interesting to know whether in these patients medical treatment alone was efficacious, and, if so, to what extent. In making these remarks on a subject of so much importance we do not wish in the slightest degree to minimise the importance of correcting refractive errors associated with symptoms, whether these occur in conjunction with fits or in individuals not so affected. All that we wish to point out is that Mr. Work Dodd's cases do not convince us that the correction of errors of refraction in epileptics is really a very important element in the successful treatment of the disease. From the data with which he has furnished us it is impossible to draw any such inference, but if such results as he has recorded had been arrived at without the aid of medicinal treatment they would have been of the utmost importance and would undoubtedly have evoked the greatest interest. We have little doubt that such a research as is here indicated will be undertaken in the near future, and we await with no little interest the results of the investigation.

ABBAZIA AND THE ISTRIAN RIVIERA.

A NEW health resort is always a valuable accession to the medical practitioner's resources, importuned as he is so apt to be by patients for whom the familiar "sun traps" and "winter cities" and places of shelter from wind and cold have lost their charm, which means in many cases their efficacy. Not altogether unknown to the connoisseur in medical climatology, Abbazia has lately, and by a variety of incidents, come prominently to the front as a haven of refuge for the weakly in heart and lungs. The place to which Billroth repaired for the alleviation of cardiac and pulmonary distress, and which certainly smoothed and lengthened out the evening of his days; the retreat to which the imperial heads of Germany and Austria have turned for a quiet breathing-time from the glare and tumult inseparable from exalted position in European capitals, Abbazia needs but to be known to justify the favour it has found with personages so distinguished. On the eastern coast of the Istrian triangle, it is a small township at the foot of the Karst mountains, on an arm of the Adriatic, called the Quarnero, which forms, according to Dante, the Oriental limit of Italy. It derives its name from an old conventual establishment, the ruins of which are still traceable on the seaboard, and its almost simple attractions as to climate, scenery, and the repose that so effectively ensures the enjoyment of both, have already marked it out as a resort for the ailing and the brain-weary. It is completely sheltered from the north by the last spur of the Julian Alps, and even in winter its delicious air is undisturbed by the atmospheric visitations that so often neutralise the charm of other health resorts. It lies an hour and a half distant by carriage drive from Fiume, which, however, may be reached from it in three-quarters of an hour by sea; and its neighbours are Volosca, with which it is municipally connected, and Lovrana—the Laurana of the Romans, so-called from the superb laurel groves in which Abbazia also abounds, and which from their lovely shade of green and the delicious perfume wafted from them proved so grateful to the dying Billroth. The capabilities of the place, as we have said, are now fully recognised, and already the managers of the South-Austrian Railway Company have afforded facilities not only for reaching it quickly and conveniently, but for making a a prolonged sojourn amid its amenities of mountain and seaboard. Ere long it will have ceased to be the well-nigh exclusive resort of the Austrian, Hungarian, and German aristocracy, for whose accommodation it now boasts some forty luxuriously appointed villas. The Adriatic littoral has many attractive spots quite near it, now made accessible by an admirable steamboat service—the imperial château of Miramar, with the melancholy interest it owes to the late Emperor Maximilian, being one of the most prominent of these. At the International Exposition of Medicine and Hygiene, about to be opened in connexion with the International Congress at Rome, a special feature will be the plans and descriptive illustrations of health resorts, particularly on the Italian mainland and seaboard. In this the medical profession cannot fail to be interested, and it will be the fault of those who wish to make Abbazia popular if it does not figure among the newer and at the same time more attractive places of sojourn accessible to the invalid or "candidate" for the rest cure.

THE WALKER PRIZE.

THE committee appointed by the Council of the Royal College of Surgeons of England to state conditions for giving effect to the proposals of Mr. Charles Clement Walker for the foundation of a prize with a view to the encouragement of the investigation of cancer have recommended the adoption of the following regulations:—(1) The prize shall be awarded for the best work in advancing the knowledge of the pathology and therapeutics of cancer done either partially or wholly within the five years preceding the year in which the prize shall be awarded; (2) the first award shall be for the period ending Dec. 31st, 1895, after which the prize shall be awarded quinquennially; (3) the prize shall consist of £100 except on the first occasion, when it will be £60; (4) the prize shall be awarded at the quarterly meeting of the Council in the April immediately following the termination of each period, and will not be awarded unless the committee appointed to judge shall consider some work deserving of it; (5) the committee shall consist of five members chosen by the Council, but not of necessity members of the Council, and they shall be appointed not less than one year prior to the date of the award of the prize; (6) the grounds upon which the prize is awarded shall be made public; (7) the prize shall be open to foreigners as well as British subjects, members of the Council

of the Royal College of Surgeons alone being debarred from competition; (8) the fund shall be invested in the name of the College; and (9) the interest upon it, as received, shall be invested for the augmentation of the capital. The committee—Mr. Hutchinson (chairman), the President (Mr. Hulke), and Vice-Presidents of the College, with Mr. Bryant and Mr. Heath—are to be congratulated upon these regulations, which were adopted by the Council. Firstly, it will be seen that the conditions make personal practical work an essential for successful competition, which is not always the case where an essay only is asked for. The prize is to be awarded for the best work, not the best essay, and it is not always the hardest, most honest, and most useful worker who produces the best-written summary or marshals his evidence in the clearest array. Secondly, by making the award quinquennial and not annual, they have given to the prize not only increased importance, but a chance that it will be bestowed as a reward for investigations that mark real advances. The pathology and therapeutics of cancer make up an enormous subject, and it might too often happen that from year to year no definite progress could be chronicled—or chronicled as proven. In a period of five years it is reasonable to expect that in some form or other advance that can be appreciated and described will always be made; but if no such progress should be reported, that fact even would have its significance, as suggesting that the investigations during a lengthy period had been directed along misleading lines, and so forming an argument for new departures. Lastly, by recommending the College to take upon themselves the public justification of their award they have caused that body to assume a satisfactory and honourable responsibility.

THE PERILS OF FOOTBALL.

WE printed in our first issue of this year a list of the accidents that had come under our knowledge as having occurred at football during the last quarter of the year which has just gone. The list, confessedly an imperfect one, though to what extent we do not know, comprised: 1 concussion of the brain, 2 concussions of the spine, 1 fracture of the thigh, 16 fractures of the leg, and 5 fractures of the arm, and in 5 cases death ensued. This roll of disaster, which we recognised might be comparatively insignificant when the enormous number of players was taken into account, we now supplement by a list of the accidents that have so far occurred in the football field (and come to our knowledge) during 1894: 1 concussion of the brain, 15 fractures of the leg, 6 fractures of the collar bone, 1 fracture of the arm, 1 fracture of the shoulder blade, 5 dislocated shoulders, 1 dislocated knee, and 5 undescribed cases necessitating hospital treatment, and 5 deaths have been reported. We have dealt with the subject fully at page 764. The factors which are chiefly at work in rendering football dangerous are very numerous. Essentially a game, whether the dribbling or running code be in question, where the greatest possible muscular exertion is called into play, and where, though the highest premium may be put upon pace and skill, both strength and weight can be made to tell, it is absolutely certain that dangerous collisions must now and again occur. These dangers are more than of the game; they constitute the game, and cannot be removed without alteration in the rules. But this is not all. Football is, in particular, dangerous in accordance with the spirit in which it is played. The element of personal conflict is very pronounced in either game, and in the give and take of a scrimmage or *mêlée* loss of temper may lead to the infliction of serious injuries. We do not consider that we are taking up the position of milk-and-water alarmists, and we know that we are expressing the views of many who can justly claim consideration as athletes, when we express an opinion that it is no longer quite a sufficient reply to a protest against the dangers of football to say that thousands play it. They do, and the fact makes the danger, if a small one, a very general one, and gives to the subject almost a national importance. We hope that those papers whose more especial province football, and the discussion of football, rightly is, will not consider our ventilation of the subject other than reasonable. We have for several successive seasons urged that the game has unnecessary elements of danger, and we may fairly take credit to ourselves for the fact that the increased power which referees now possess, and without which undoubtedly the perils would be still more marked, was loudly recommended in our columns many years ago. We are deeply desirous that those capable of setting the public mind at rest upon the subject should take steps to do so.

THE MEDICAL OFFICER OF HEALTH OF PADDINGTON.

THE Vestry of Paddington proceeded on Tuesday last to the appointment of a medical officer of health for the borough, in succession to Dr. Stevenson, who resigned on account of failing health. The candidates were thirty-nine in number, the three finally selected by the sanitary committee being Mr. Harris, medical officer of health of Southampton, Dr. Priestley, medical officer of health of Leicester, and Dr. Reginald Dudfield, medical officer of health of the borough of Eastbourne. The choice of the Vestry fell on the last-named gentleman, who holds the degrees of M.A. and M.B. Cantab., and is also D.P.H. of the same University, L.R.C.P. Lond., and M.R.C.S. Eng. Dr. Reginald Dudfield has held his present appointment since 1891, in combination with the medical officership of the Borough Sanatorium, and the surgeoncy of the Borough Police.

ACUTE CEREBRAL AMAUROSIS OF INFANCY.

IN the last number of the Royal London Ophthalmic Hospital Reports Dr. William Gay relates several cases of this curious and so far unexplained condition. In certain cases, he says, absolute blindness is discovered when symptoms suggestive of meningitis are beginning to clear up, and no appearances can be discovered with the ophthalmoscope which offer any explanation of the fact. Such amaurosis is sometimes found after basic meningitis with cervical opisthotonos, and also after simple meningitis. Sometimes it follows a series of convulsions, and one case described by Mr. Nettleship was associated with symptoms pointing to thrombosis of the veins over the Rolandic area. Dr. Gay describes seven cases in all. In the first one there was a history of a slight, apparently cerebral illness, and twenty-three days after the commencement of this the child was brought to the hospital quite blind. There was no change visible in the fundus, and after treatment for a few days with mercurial ointment the blindness had disappeared and her health became re-established. The second case was similar, and the patient also recovered sight perfectly. The third case had a condition of stupor succeeding a series of fits occurring in the course of whooping-cough. This was succeeded by otorrhœa on the right side and facial palsy. After this there were convulsions, and blindness remained present for three or four months; but sight gradually returned and was, apparently, about to do so completely, when the child passed away from observation. In the fourth case also the amaurosis succeeded a series of fits without apparent cause. The discs were very sharply defined, and the vessels appeared to be normal. There was, however, in this case no improvement of vision during the time the child remained under observation. The fifth case was likewise one in which the blindness succeeded a series of fits; in this case, however, vision greatly improved before the patient ceased to attend at the hospital. In the next case the blindness

was first noticed after an attack of cervical opisthotonos and unconsciousness; this, however, had been preceded by a period of restlessness with rotatory movements of the head. When the child came under observation the fontanelle was large and distended, and the head had grown considerably. No improvement in vision took place, and the discs became more and more grey under observation. The last case is a curious one—optic papillitis occurring in a patient the subject of chorea, and at the time he came under observation he was suffering from headache and vomiting. He also had had occasional loss of power in his arms and once in his legs. The headache and vomiting gradually became less, and the neuritis subsided, leaving the discs perfectly normal in appearance. Nothing was found to explain the symptoms. The first six cases are of one kind and very interesting. The suddenness of the onset of blindness, the mysterious nature of the illness, and the subsequent course—in some recovery, in others permanent blindness—all mark out the cases as of great practical as well as theoretical interest. It may be that there is some inflammatory condition of the optic nerves which clears up before it has been able to manifest itself at the disc, and if that is so the temporary blindness might be regarded as analogous to the sudden and frequently temporary amaurosis sometimes seen in cases of cerebral tumour with optic neuritis. The last case is interesting as an illustration of the completeness with which some cerebral symptoms may disappear, and as showing how optic discs may, after the acute condition has subsided, exhibit absolutely no trace of the acute inflammation which had once been present.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE annual general meeting of this Association took place at 11, Chandos-street, on St. Patrick's Day, Saturday, March 17th. The President, Dr. Richard Heath, of St. Leonards, was in the chair, and there was a large and influential gathering. The annual report was read by the honorary metropolitan secretary, Dr. Cagney, and on the motion of Dr. Mapother, chairman of council, was unanimously adopted. It was announced that the Association had increased rapidly in numbers and that the roll of membership included 720 names. The balance-sheet was read and adopted. The officers for the ensuing year were elected, and after the usual votes of thanks the meeting terminated. The annual dinner took place on the same evening at the Café Monico, Dr. Richard Heath in the chair. In point of numbers, and in other respects, the gathering was the most successful which has yet taken place under the auspices of the Association. An excellent programme of music was supplied by M. Tivadar Nachez, Mr. Bernard Lane, Mr. Liddle, Surgeon-Major Carte (Grenadier Guards), and others, and the Irish songs were much appreciated. The speakers included Sir Raymond West, K.C.I.E., and Mr. R. O. B. Lane (guests of the Association), Inspector-General Lloyd, R.N., Surgeon-Major Grier, Dr. Cagney, Dr. Mapother, Mr. Widenham Maunsell, Dr. Anderson, and the President. In the course of the evening sympathetic reference was made to the late Surgeon-Major Parke, who was a constant attendant at these dinners.

"SOME TRUTH ABOUT VIVISECTION."

THE thanks of the medical profession, whatever their private views, are due to the *Pall Mall Gazette* for its able articles entitled "Some Truth about Vivisection." The writer has dealt with the subject in a well-reasoned, practical, and temperate manner—just the manner to correct the inaccurate impressions against which his remarks have been levelled. Most medical men will be on his side from the first, for they are convinced that from the numerous physiological processes included loosely under the term "vivisection" much practical knowledge has resulted to the profession of medicine, and, therefore, much good to mankind; but it is not necessary to believe even so far in order to appreciate the fact that the *Pall Mall Gazette*—and for the second time in the last few months—has fought the battle of science in the way that science most often requires to have it fought and yet is most often unable to fight it—the popular way. It is so hard for science to defend herself against a wrong popular impression that when a popular paper comes to her rescue and in language that is free from extravagance and guiltless of technical obscurity defends her from hysterical imputation we consider that the whole of the medical profession should recognise its debt. We repeat that the private views of the members of the profession should not affect this recognition. There are some, we know, who believe that experiments upon animals have not advanced our learning sufficiently to warrant their performance—and they are at liberty to hold that opinion if it has been arrived at after due consideration of all the arguments on either side—but they, in common with their brethren who believe that science owes progress in many directions to physiological experiments upon animals, must feel that the *Pall Mall Gazette* has spoken in the interest of medicine. The papers entitled "Some Truth about Vivisection" have very clearly been written in the interests of science, and will furnish those laymen who do not desire to believe that the man of science is necessarily cruel, immoral, and untruthful with facts to support their scepticism.

AN EXPERIMENT IN COLONISATION.

AMONG the miscellaneous series of papers issued by the Foreign Office of this country a report on Baron Hirsch's Jewish colonisation scheme has just been published. The subject has some interest and importance outside the limits of the terms by which it is circumscribed in the philanthropic scheme, for among the sanitary and socio-political requirements of this country we are always confronted with the question of how to diminish the overcrowding and poverty present in our large towns and to provide fresh fields for hope, work, and enterprise among large masses of indigent people who cannot find remunerative work in this country. Emigration has, no doubt, its difficulties; still, were it possible to ladle out from time to time the surplus population of our overcrowded cities and large towns and give them a chance elsewhere for the useful employment of their energies, we should not only add immensely to their health and contentment, on the one hand, but confer a vast benefit on the population left behind, on the other. It is in this direction that this official account of the working of the Jewish colonisation scheme in the Argentine Republic affords us some gleams of light and hope. It is a remarkable fact, to begin with, that an agricultural experiment should have succeeded, as it has, among a people who have been generally regarded as peculiarly unfitted for agricultural colonists, and whose previous life and occupations in town were altogether opposed to agricultural pursuits. The Jewish emigrant to the Argentine Republic, backed by Baron Hirsch's capital and aided by some training conducted by practical men, has, the report states, succeeded beyond expectation. From a social point of view the Vice-Consul declares that this enterprise offers many points of interest, and he urges that all European nations, and more particularly those which have large surplus populations, would do well to study the emigration question and conditions of land purchase in the Argentine Republic, which promises to become a large field for emigration in the near future. The Jewish Colonisation Association was founded in 1891 with a capital of £2,000,000. There will be nearly 6300 Jews established on Baron Hirsch's colonies by January of this year, most of whom have come from Southern Russia. After a colony has been properly

organised local self-government is introduced. A council is elected which determines the work that each colonist has to perform and regulates the questions of building, public health, transport, &c. The areas at present under wheat crops alone represent a value of £30,000, equal to 7 per cent. of the capital so far invested.

MR. GLADSTONE'S HEALTH.

MR. GLADSTONE has now regained strength and appetite and is also sleeping well. He is, however, still troubled a great deal by hoarseness and suffers from bronchial catarrh. We understand that Mr. Gladstone proposed to consult a London ophthalmic surgeon early this week, but as Mrs. Gladstone is unfortunately still unwell his plans may have been changed.

ANIMAL EXTRACTS IN THE TREATMENT OF ORGANIC NERVE DISEASE.

IT is now some years since Dr. Brown-Séquard brought before the notice of the medical profession a fluid manufactured from the testicles of rabbits and other animals which it was claimed had the power of endowing tottering senility with the energy and strength of vigorous manhood. The so-called discovery did not at the time attract much attention in this country. It was discussed perhaps and dismissed with a shrug and a smile. As time went on, however, extensive trials of it were made on the continent, and wonderful results were reported, more especially by French therapeutists, and under the circumstances it is perhaps not to be wondered at that physicians in this country, especially such as were chiefly concerned with nervous diseases, in which the fluid was supposed to have a peculiar efficacy, felt it incumbent upon them, however incredulous they might be in the matter, to give the preparation a fair trial. A few weeks ago[1] we published a paper by Drs. Guy Wood and Whiting, the house physicians at the National Hospital for Epilepsy and Paralysis in Queen-square, in which were detailed a series of careful observations carried out by them under the supervision of Dr. Hughlings Jackson, Dr. Buzzard, Dr. Bastian, and Dr. Ferrier on 23 cases of nervous disease in the hospital. The details of the treatment we need not repeat. It will be sufficient to say that the method pursued was that recommended by the inventor of the fluid; but it will be interesting, and possibly instructive, briefly to recapitulate the results arrived at. The cases treated comprised 4 of tabes dorsalis, 2 of Friedreich's ataxy, 1 of ataxic paraplegia, 4 of disseminated sclerosis, 2 of lateral sclerosis, 4 of paralysis agitans, 1 of double hemiplegia, 1 of left-sided hemiplegia, 1 of peripheral neuritis, 1 of progressive muscular atrophy, and 2 of functional paralysis, and no one, we venture to think, will regard such a series as not sufficiently comprehensive. It is not difficult to sum up the results obtained. In only 2 cases—1 of tabes dorsalis under Dr. Ferrier's care and 1 of peripheral neuritis under the same physician—was there any obvious change for the better; but even in these cases the reported improvement is capable of being explained without any regard to the nature of the medication employed, for the former was a case of tabes occurring in a very alcoholic subject, and his removal while in hospital from his besetting weakness is much more naturally to be credited with the benefit which he experienced than the administration of the fluid. In the other case—one of alcoholic neuritis—the improvement was only such as naturally takes place in that disease, so that here also the fluid cannot be credited with a great deal. It is true that nearly all the patients expressed themselves as feeling better, but in the absence of any evidence of improvement such a statement cannot be regarded as carrying much weight; but even the possibility that it might be urged as evidence in favour of the efficacy of the drug has been provided for. Two patients were treated in exactly the same way, but with distilled water substituted for orchitic fluid, and both these patients also expressed themselves as feeling much better. In any method of treatment, especially in one that happens to be unusual and impressive, the mental effect must be allowed for, and in the cases treated with the fluid now under consideration, when this mental effect is allowed for, there is nothing further, we think, in their condition requiring explanation. The names of the physicians under whose supervision the observations were carried out are of such well recognised authority, not only in this country but amongst all neurologists, that it is impossible to doubt for a moment that their observations will have the effect of discountenancing a method of treatment which is as much without any scientific foundation as it seems to be without practical result.

[1] THE LANCET, Feb. 3rd, 1894.

THE CASE OF MR. R B. ANDERSON, F.R.C.S.

ON Tuesday last a deputation of the British and West Indian Alliance and others were introduced by the Earl of Stamford to the council of the London and Counties Medical Protection Society at the treasurer's residence, 37, Harley-street, with reference to the appeal to the Privy Council in the case of Marshall and Wife *v.* Anderson of Tobago. Lord Stamford made an able speech in support of Mr. Anderson, and a powerful letter in his behalf was also read from Bishop Mitchinson, late of Barbadoes. The council unanimously decided on opening a subscription list for funds to prosecute the appeal.

WORTHING WATER-SUPPLY.

ON Tuesday it was eventually decided by the Worthing Town Council to purchase a site for waterworks on the Downs which has been recommended by Mr. Baldwin Latham as one of the freest from pollution in the neighbourhood. Seven acres are to be purchased at £200 per acre, and this includes the right to drive adits in any direction to increase the supply of water. The question has been under consideration for some months, and eight different sites were specified.

THE WILLESDEN AND DISTRICT MEDICAL SOCIETY.

IT is proposed to form a medical society for the district of Willesden. The inaugural meeting is to be held on Thursday, March 29th, at 8 P.M., at the Harlesden College, Bramshill-road, close to Willesden Junction. Mr. Hutchinson, F.R.S., will deliver the opening address. The subject will be Dermatology, the Threshold of Medicine. All qualified medical men wishing to attend are asked to send their cards previously to Mr. Alfred Bindley, M.B., Westbury Home, Harlesden; or Mr. William Butler, M.B., Craven Park-road, Harlesden.

HÆMORRHAGIC MENINGITIS DUE TO CHARBON.

THIS formed the subject of a paper read before the Société Médicale des Hôpitaux by Dr. Roger and Dr. Crochet on March 3rd of this year.[1] The case was that of a man who was admitted suffering from erysipelas which had developed around a fistula apparently of a malignant nature. The erysipelas appeared four days before the man came under observation, and as his general condition was satisfactory the prognosis was thought to be a favourable one. Soon after he was first seen, however, by the surgeons he suddenly became unconscious. The limbs were relaxed, the extremities cyanosed and very cold, the cardiac beats became feeble and rapid (123 per minute), and the number of respirations quickened (36 per minute); insensibility was complete. After some transitory convulsive movements the patient passed

[1] L'Union Médical, March 6th.

into coma, which gradually deepened and he died in about three hours after the onset of the symptoms. At the necropsy a large amount of serous infiltration was found in the neck, pectoral muscles, and in the cellular tissue of the mediastinum. The blood was very dark and almost of the consistency of treacle. The pia mater was transformed into a regular sanguineous mass, which completely surrounded the ventricles, pons and cerebellum. The dura mater was congested, and this condition extended down the cord, whilst in the lower dorsal and lumbar regions there was a copious hæmorrhage which extended like a ring round the cord. Bacteriological examination demonstrated a double infection. One, local, consisted of streptococci, the other exhibited characteristic anthrax bacilli, and was general; the rods being formed (unaccompanied by streptococci) in the blood, the viscera and the meninges. Cases of meningeal hæmorrhage accompaning cases of anthrax have been already recorded, but the writers had not been able to find any record where the lesions were so extensive as in their case. The source of infection of malignant pustule in this case could not be traced although careful inquiries were made.

AT a council meeting of the Metropolitan Police Surgeons' Association, held at New Scotland-yard on Thursday, March 15th, Dr. Yarrow, one of the vice-presidents, was requested to represent the interests of divisional surgeons by becoming a candidate for the coronership of North-East London, vacant through the death of the late Dr. R. Macdonald.

MR. MOCKLER has arranged to exhibit his collection of Jenner relics at the First Avenue Hotel in Holborn. The exhibition will open on March 26th. It is proposed to have the collection on view from 10 to 6, admission being free to all members of the medical profession. Mr. Mockler hopes to keep the exhibition open for some weeks.

Mr. E. K. HOUCHIN, L.R.C.P. & S. Edin., L.S.A. Lond., has been appointed by Mr. Wynne E. Baxter, D.L. and J.P., coroner for the Eastern Division of the County of London, and approved by the chairman of the London County Council, to act as deputy in place of Mr. George Collier, deceased.

PROFESSORS GREINLAN and ROCHE and Dr. MORE MADDEN, have been appointed as delegates of the Catholic University Medical School Dublin, to the International Medical Congress at Rome.

WE understand that Dr. Leslie Phillips has resigned his position as one of the secretaries of the Medical Defence Union.

DR. GUSTAVE SCHORSTEIN has been elected to fill the vacant post of assistant physician at the London Hospital.

THE INTERNATIONAL MEDICAL CONGRESS.

OUR own correspondent, under date Rome the 15th inst., writes: "Within measurable distance of the opening of the Congress it may be well to prepare the intending visitor for the programme that awaits him. THE LANCET has already given the hours during which the sittings will be held. The next indications of interest are the arrangements completed by the 'Comitato delle Feste Pubbliche' (Public Entertainments Committee). Let us begin with the illumination of the 'Platea Archæologica' (archæological area) and that of the Roman Forum and the Colosseum and its surroundings.

"The members of the Congress and their friends who have qualified to take part in its proceedings will enjoy the unique spectacle from the Palace of Augustus on the Palatine Hill. The illumination will be made on three separate occasions.

"1. There will be that of the 'Platea Archæologica,' properly so called in illustration of the plans associated with the names of two of Italy's most eminent Ministers of Public Instruction—Signor Bonghi and Dr. Baccelli.

"2. An illumination with Bengal lights and reflecting mirrors of the Colosseum; of the Church of Saints John and Paul on the Cælian Hill; of the Triumphal Arches; and of the monuments immediately adjoining the Flavian Amphitheatre.

"3. This, in some respects the most interesting of all, will be an illumination of the Palatine Hill (the Palaces of the Cæsars), the Forum, and the Capitol.

"So much for the local archæology.

"The nineteenth section of the Congress, that of Hydrology and Climatology, will also include the third meeting of the International Hydrological Congress—the proceedings of the latter following immediately on those of the former. At the close of its sittings the International Hydrological Congress will commence from Naples a series of excursions, for which full arrangements have been completed by the Neapolitan town council and the Naples branch of the Italian Hydrological Association. The programme will begin on April 6th, and its features include the starting from Rome, at 8 A.M. of the 6th, of the participants in the nineteenth section of the International Medical Congress and of those members of other sections of the Congress who have entitled themselves to share in the excursions of the nineteenth section. At 1.30 P.M. of the 6th there will be a reception of the arrivals from Rome at the Naples terminus, where the Neapolitan syndic and the Neapolitan subcommittee of the association will await them. At 5 P.M. there will be a reception at the Municipal Hall, where the International Hydrological Congress will formally wind up its third meeting; and at 9 P.M. there will take place a 'spettacolo di gala' at the great San Carlo Theatre. On the 7th, at 7.30 A.M., there will be a visit to the reservoir of the magnificent Serino aqueduct, which now supplies Naples with water, and at 9.30 A.M. the excursion party will start for Agnano and Bagnoli, where luncheon will be served. On the 8th, at 7.30 A.M., the excursionists will embark at the Immacolatella of the port of Naples for Casamicciola, in the island of Ischia, where they will arrive at 10 A.M. and be received by the municipal authorities. At 1 P.M. they will dine; at 3 P.M. they will make sundry trips to spots of interest in the island, and at 6 P.M. they will return to Naples. On the 9th, at 9.15 A.M., the excursionists will start for Torre Annunziata, where, at 9.41 A.M., they will be received by the municipality, under whose guidance they will make a round of visits to the balneological establishments, after which there will be luncheon. At 12.40 P.M. a start will be made for Castellamare di Stabia, where the local baths will also be visited under the superintendence of the authorities, who will also entertain the excursionists at a banquet. At 9.15 P.M. the party will return to Naples. On the 10th, at 8 A.M., there will be an excursion to Telese, arriving at 9.30 A.M., and a visit to the 'Stabilimento,' followed by luncheon, and at 4 P.M. the return to Naples will take place. For such of the party as desire it there will be trips to Tuscany, including visits to Monte Catini and Casciana; to Piedmont, with excursions to Acqui, Andorno, and Cossilla; and to the Venetian territory, where the famous baths of Battaglia and Abano will be visited.

"Next in importance to the International Medical Congress comes the 'Esposizione Internazionale di Medicina e d'Igiene,' which, on the 28th inst., will be solemnly opened in presence of their Majesties the King and Queen of Italy, a ceremony for which preparations are still in progress on a magnificent scale. Of all the exhibitions ever witnessed in the Palazzo di Belle Arti (the 'Burlington House' of Rome), varied and elaborate as many of them have been, that about to be inaugurated may be pronounced to be the best organised and the most calculated to succeed. Certainly it will surpass in richness and arrangement of exhibits all the 'Esposizioni' yet held in connexion with any international medical congress. More than 600 exhibitors have sent in their products, and among them are numbered many Italian firms of repute and many of the other European nationalities. On the evening of the 28th there will be a State reception in the Palace of the Fine Arts of the 'Congressisti' and 'Espositori,' with a view to which the 'Gran Serra' (already described in THE LANCET) will be denuded of its customary appointments

to serve as a 'salone di ricevimento.' In it alone will be placed on view the tasteful 'vetrine' (glass cabinets), containing the specimens of articles of ancient medicine, surgery, and hygiene (the so-called 'Esposizione Retrospettiva ed Archeologica') collected and arranged under the scholarly supervision of Dr. Sambon. The number of the exhibitors having far exceeded the most liberal anticipations, and the *locales* of the Palace having been found to be inadequate, some sections of the 'Esposizione' have had to find accommodation in the neighbouring Eldorado and others under the glass roofs now in course of construction around the building. Among the exhibitors some are represented on, literally, a colossal scale. For example, the Director-General of the Hygiene Society of Berlin has two large halls entirely to himself, while the Director of the Sanitary Services of the German Army has sent in exhibits which will fill a space of 300 square metres—viz., a space in the open, accommodating field hospitals of the completest and most interesting type. Other features in which the 'Esposizione' will be especially rich will be surgical instruments and electro-therapeutic appliances; special furniture for operating theatres; apparatus for disinfection and sterilisation; pharmaceutical and hygiene products; and plans, designs, models, and studies of aqueducts and drains, of hospitals, schools, and prisons, and of all kinds of public edifices. Many Italian town councils have sent in designs and models, in high and low relief, illustrating the principal works of sanitary improvement completed or in progress within their several jurisdictions. Among such are the municipalities of Turin, Milan, Perugia Florence, and Rome. This section of the Exhibition is meant to be 'una vera storia monumentale del risorgimento igienico Italiano' (a real monumental history of the sanitary resurrection of Italy). The Hydrological Section will include an immense assortment of specimens of the almost infinite wealth of the peninsula in mineral waters.

"The name of Dr. Sambon has already been signalised in connexion with this truly splendid 'Esposizione.' Praise is also due to the Commendatore Pagliani, the chief health officer under the Government and president of the executive committee of the Exhibition, and, further, to the executive committee itself, for the energy, intelligence, and ingenuity with which the contents of the 'Esposizione' have been collected, distributed, and placed most effectively *en évidence*. The engineers, Signori Berlenda and Bentivegna, have already received from THE LANCET the commendation earned by their high professional skill and their unvaried exertions in coöperating with Dr. Pagliani and his staff."

ROME, AND HOW TO SEE IT.

(Continued from page 697.)

"VICTOR EMMANUEL," said a Roman physician, "by shutting up Pius IX. in the Vatican undoubtedly prolonged the Pope's days. The four immediate predecessors of his Holiness all suffered from a chill caught by performing a function in a gusty basilica and died, sooner or later, from the effects of it. Pius IX. was spared that exposure. While he obtained plenty of fresh air in the roomiest of palaces and the most delightful of gardens, he ran no risk from draughts or sudden transitions from hot to cold." The moral conveyed by these words should be treasured by all visitors to Rome, and on no occasion more vigilantly than in an exploration of the catacombs. To arrive weary and hot at the mouth of one of these subterranean labyrinths and then proceed to thread its ice-cold and musty recesses is simply to court one or other of those illnesses popularly, if not conveniently, grouped under the name of "fever." To repeat the advice with which we started: "Let the visitor drive to the place he is going to see," and begin its exploration or study, fresh and vigorous, with "resisting power" above par.

We have left the Pagan interest behind and are now face to face with the Early Christian. The period embraced by this extends from the beginning of our era to Constantine's conversion to Christianity (about A.D. 312) and even for a century and a half subsequent to it; for, though the persecutions which necessitated the recourse to burial and worship in the catacombs ceased under that Emperor, these underground retreats were frequented on account of the associations with which they had become hallowed, while they continued in use as cemeteries long after they had been abandoned for divine service. Apart from the special history attaching to each of the sixty catacombs distributed in every direction outside the walls, they have so strong a family likeness that, having seen one, the visitor has practically seen all. The catacombs of St. Agnese are those we should advise him to select, firstly as in themselves of superior interest, and, secondly, as being not far from the "Policlinico," to which he will inevitably make a pilgrimage. A third reason for preferring them is their association with Cardinal Wiseman's brilliant romance "Fabiola," in which that accomplished ecclesiastical scholar interweaves with the story of the saint a series of vivid and memorable pictures of the habits and religious observances of catacomb life.

In supplement to what he has seen, the visitor should next repair to the Lateran Basilica and the adjoining Museum, particularly that section devoted to Early Christian antiquities. Admirably arranged by the late Padre Marchi and by its director, the Commendatore G. B. Rossi, the collection illustrates the art and the religious conceptions of the Primitive Church—the sarcophagi with their bas-reliefs being especially interesting and instructive. Next let him drive to the Church of San Clemente, quite near, one of the Early Christian edifices which has been least altered by after-treatment, and which, indeed, is built on the lines of a still more ancient basilica, which in turn replaced an earlier pagan temple, this latter still retaining its chapel dedicated to Mithras. Rome contains few more striking illustrations of the successive strata of religious development than in San Clemente, which forms the subject of an able monograph by its devoted and scholarly excavator, the late Father Mullooly. From this a drive to St. Peter's will carry the visitor past much that is most interesting, but which, with due regard to economy of time and attention, need not detain him. Leaving on one side the Church of Saints Cosmas and Damian, with their medical history, he may alight for a few minutes at the Kircherian Museum on account of its unique specimens of Early Christian treasure-trove. Among these is the celebrated *graffito* representing one Alexamenos in the act of adoring the Saviour, who is portrayed as a man with an ass's head hanging from the Cross. The rude sketch is a pagan's caricature of the Crucifixion, and, as its date is the second century, it is probably the earliest representation of Our Lord's death. Arrived at St. Peter's, the visitor should descend to the crypt and take note of its characteristic form and the many features, historical and artistic, peculiar to it. Regaining the level of the Basilica, he may conclude the forenoon's work with a walk up its nave and down its aisles, remarking the gorgeous chapels on either side. This digression, though not in chronological sequence, is justified by the surpassing interest of the Basilica itself, which, when time is limited, should receive all available attention.

When the First Napoleon asked Canova what were the three finest specimens of mediæval church architecture in Italy, the great sculptor answered at once: "St. Mark's at Venice; the Cathedral and Campo Santo at Pisa; and the Cathedral of Orvieto." He found no basilica or church in Rome worth mentioning beside these, and in truth the visitor need not spend much time in exploring them. True, there is hardly one of them without its special interest—its relic or its tomb of a distinguished warrior, artist, man of letters, or ecclesiastic; but, architecturally considered, and particularly in the matter of internal decoration, they, each and all of them, jar on the taste or offend the eye, now by rococo design, now by *stuonature* in colour, and now by excessive richness of ornament, making all the more conspicuous the poorness of the conception. The visitor may, therefore, leave them unentered, or reserve them for another season, devoting such forenoons as he can still spare to the art-galleries, especially those of sculpture. Here, again, the restricted time at his disposal counsels selection, his passage through the miles of corridors or "bracci" having to be made in swallow fashion—that is, skimming and dipping.

Sculpture takes precedence in Rome even more prominently than painting in Florence, and the first forenoon should be spent among what Thackeray called that "great, silent population of marble"—the collection of statuary in the Vatican. At least two hours will be required to do it justice, and as at the evening reception on Monday, April 2nd, in the Capitol, the sculpture in that Palazzo will also be on view under the electric light the visitor may combine in one day his enjoyment of the two galleries—perhaps the finest exhibition of plastic art the world has to show. It is idle to select from an assortment so vast the *chefs-d'œuvre* on which to fix attention; but one feature of ancient statuary will not escape the medical visitor—the care bestowed by the

artist on anatomical detail. Studies in the nude were easy to the Athenian or the Rhodian sculptor, and the opportunities he possessed at athletic games or in solemn processions he utilised with a felicity which is the envy and despair of his modern rivals. Michel Angelo restored the arm of the so-called "Dying Gladiator" in the Capitol with a mastery worthy of the original; but his success only throws into deeper contrast the failure of Bernini's pupils in the celebrated group of the Laocoon. A more instructive piece of bungling could hardly be conceived, the right pectoral muscles of Laocoon himself and of the youth at his side indicating a totally different attitude of the right arms from that which the restorers have attempted. The composition of the group is thus destroyed—how fatally, may be seen in the engraving from the original in Munro's "Horace." All this, however, by the way. The visitor, even if he allows himself to be guided by the handbook and notices nothing but what the conventional two stars (* *) indicate as of superlative merit, will be more than rewarded for all the concentration and study he can bestow. Other *chefs d'œuvre* of sculpture will meet his eye at frequent intervals in his passage through the city—notably the equestrian statue in bronze of the noblest of the emperors (Marcus Aurelius Antoninus) in the Piazza of the Capitol. Of this masterpiece Michel Angelo was so fond that he would never treat the horse as other than alive and would pat its neck and say, "Cammina, cammina!" (Step out, step out!) If, on the other hand, the visitor would like to see bronze sculpture at its nadir, let him give a glance at the statue of Our Lady in the Piazza di Spagna, where, combined with every conceivable blemish, the "mystery" of fusing metal seems to be a lost art. The symplegma, or so-called Castor and Pollux, in the Piazza of the Quirinal, the Moses of Michel Angelo in the Eudoxian Basilica (an edifice otherwise notable for its preservation of St. Peter's chains), and the "Pietà" in the Corsini Chapel of St. John Lateran—a masterpiece, only second to Michel Angelo's in St. Peter's and showing what Bernini was capable of when he liked—are a few among many *chefs d'œuvre* which he may look at as opportunity offers. But his zeal for sculpture should not seduce him from forming some acquaintance with the treasures which Rome possesses in the sister art. A special visit to the Vatican should be undertaken, if only on account of the Sistine Chapel, with Michel Angelo's "perilous" feats in the "Day of Judgment" and the Stanze of Raphael. Among these the "School of Athens" will rivet and reward his attention and economise his time in this sense that it will make him rather impatient of the other and inferior work with which Rome abounds.

(To be concluded.)

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

I. MEETING OF THE FELLOWS.

A MEETING of Fellows was held on Monday, the 19th inst., at the College, having been summoned by the Council to consider the resolution of the delegates of the Royal College of Physicians and the Royal College of Surgeons approving of the report of the Gresham University Commission. The President, Mr. J. W. Hulke, F.R.S., was in the chair and made a statement explanatory of the proceedings of the College in reference to the establishment of a Teaching University for London, in which he showed that in 1885 the two Royal Colleges petitioned the Crown for power to confer degrees in medicine, and that later they joined in the general demand for a Teaching University for London which should include all faculties and not that of medicine only. He further expressed it as his opinion that it would be very desirable to support the recommendations of the Commission.

Mr. H. W. Page, in moving "That the report of the Commissioners appointed to consider the draft charter for the proposed Gresham University in London does in principle commend itself to this meeting of Fellows of the Royal College of Surgeons of England," thanked the Council for calling the meeting so early, as it was important that no time should be lost in proceeding with the matter, and this the Commissioners themselves had recommended. He thought the scheme was not quite clear as to whether all or only some of the teachers of the constituent colleges were to form part of the faculties. The Academic Council, which would represent the faculties for administrative purposes, was a hitherto untried arrangement and it was impossible to say how it would work. He deprecated any opposition to the scheme which might arise from objections to minor details and further pointed out that the College would not lose its identity in the new University, but that its diplomas would still be sought after, and that the Colleges would give prestige to the new University.

Mr. R. J. Godlee seconded the motion.

Mr. R. M. Craven expressed his pleasure at the recognition of the Society of Apothecaries in the new scheme.

Dr. W. J. Collins thought that any attempt to consider the question in a narrow spirit would do great harm, but he was inclined to think that under the present scheme the Colleges would gain and the University of London would lose. The real difficulty in the medical degrees of the present University of London was to be found in the Matriculation and the Preliminary Scientific Examinations, and, therefore, if these were maintained at their present level, the attainment of medical degrees would not be rendered any easier, while, if the standard were lowered, the work, which had been so well done by the present University, would be considerably damaged.

Mr. C. B. Keetley considered that the average London medical student should be able to look forward to a degree in medicine.

The motion was adopted.

Mr. R. M. Craven then moved, "That, in the opinion of this meeting of the Fellows of the Royal College of Surgeons of England, in case the scheme for a Teaching University in London becomes law, there should be granted during the first year of its existence a year of grace, and *honoris causâ* any gentleman having arrived at the age of sixty-five, and who possesses the diploma of F.R.C.S. Eng., M.R.C.S. Eng., L.R.C.P. Lond., or L.S.A. Lond., of good repute among his Fellows, shall be entitled, on application to the University and on having his application signed by six gentlemen of good repute with London diplomas, to receive the degree of M.D. (Doctor of Medicine) on payment of a fee of fifty-two pounds ten shillings."

The motion was not seconded, and the proceedings terminated.

II. MEETING OF THE MEMBERS.

A meeting of the Members of the Royal College of Surgeons, which had been convened by advertisement only, was held in the theatre of the College at 3 P.M. on Tuesday, the 20th inst. At the hour for commencing the proceedings three Members were present in the body of the theatre and four members of the Council in the well. In the progress of time the three Members swelled to ten, inclusive of a Fellow or two, and the four members of Council to six. Three door-keepers and four or five officials made up a grand total of eighteen.

The President, in an introductory statement, explained how the movement for a new University arose from the wish which students in London had to possess a degree in medicine.

Mr. T. R Atkinson asked the President to give the meeting the benefit of his own opinion on the new scheme.

The President said that his personal opinion was that the new scheme was certainly a good one, and that he thought the College would do well to go forward in the matter.

Surgeon-Major Ince, in moving "That this meeting of the Members of the Royal College of Surgeons of England approve generally the principles contained in the report of the Commission appointed to examine the draft charter of the proposed Gresham University in London, and therefore commend the scheme therein set forth to the earnest support of the Council of this College," said that the empty benches showed how much interest the Members felt in the subject. He felt inclined to rely on the Council in this matter. He observed that it had been long a grievance that English practitioners could not with reasonable exertions obtain an M.D. degree; he considered that the preliminary studies should be more thorough.

Mr. A. G. Haydon seconded the motion and said that many men in London possessing the double qualification were compelled to go to a continental university in order to obtain an M.D. degree.

Mr. Atkinson thought that so scanty a meeting could hardly be called representative of the Members.

The President then put the motion. Three or four Members

said "Aye," and, no one saying "No," the motion was declared carried, and the meeting terminated with a vote of thanks to the chairman. It is unnecessary to comment on this *reductio ad absurdum*—the result partly of the insufficient notice.

THE SOCIETY OF FELLOWS OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A NEW association or Society of Fellows of the Royal College of Surgeons of England has sprung into existence. Its birth and early growth are thus described in the actual words of a circular which has just been issued to the Fellows, signed by Mr. Herbert W. Page, Chairman of the Provincial Executive Committee, and Mr. F. C. Wallis, Hon. Sec. "The recent decision of the Council of the Royal College of Surgeons that two meetings of Fellows shall be held at the College in the course of each year has been regarded as a movement of so much importance in the history of the College that a private meeting of thirteen Fellows—one drawn from each of the London medical schools—was recently called to consider whether any, and if so what, steps should be taken to enable the Fellows by concerted action to gain the fullest benefit for the College from this new privilege. Before taking any definite action thereon it was resolved to ask the opinions of some thirty provincial Fellows, either connected with medical schools or of repute in the chief towns upon the question and to invite them to attend a meeting in London. The replies were so generally favourable to the views expressed in the letter sent to them that it was determined to invite other London Fellows to the number of two more from each of the medical schools to attend the meeting." This meeting was held at 11, Chandos-street on March 8th, and was attended by thirty-three Fellows of the College, the majority of whom are teachers in the medical schools. The following resolutions were passed unanimously: 1. That it is desirable that a Society of Fellows of the Royal College of Surgeons of England be formed. 2. That a circular be addressed to all the Fellows of the College inviting them to attend a meeting with a view to the formation of a Society of Fellows, and that any Fellows unable to attend be requested to signify their willingness or otherwise to join the proposed society. 3 That a provisional executive committee be appointed to carry out the foregoing resolutions and that it do consist of the chairman, Mr. Page, and Messrs. Bennett, Treves, Golding-Bird, Bowlby, and Wallis. The Society of Fellows is intended to be formed "on the widest and most representative basis, not only that the Fellows themselves may derive such advantages as will accrue to them from the recent action of the Council, but also that all matters which from time to time must engage the attention both of the Council and the Fellows may be properly ventilated and discussed. It is hoped that the attitude of the Society towards the Council will be one of friendly criticism, and that its action towards that body will be guided solely by the expressed opinion of the Fellows upon such questions as may arise." The points to which the attention of the Society is to be directed at present are—

"(*a*) The desirability of holding meetings for the discussion of matters concerning College management and for eliciting opinions which may be regarded as representative of at least the majority of the constituency.

"(*b*) To give the Council the support of its constituency in any steps thought necessary to be taken for obtaining such alterations in the Charter as shall better enable it to deal with any Fellows or Members who have been guilty of professional misconduct.

"(*c*) By well-digested argument and in such a manner as to represent the opinions of the majority of Fellows to urge upon the Council such reforms as may be considered necessary."

We have referred further to the matter in a leading article.

ON Wednesday last the Lord Mayor presided at the annual meeting of the Royal Hospital for Diseases of the Chest, City-road, E.C., and, after inspecting the wards, presented the hospital with ten guineas.

CONVOCATION OF THE UNIVERSITY OF LONDON.

WE are glad to be able to furnish in the following article an account of the position of Convocation in reference to the report of the Gresham University Commission.

At the special meeting of Convocation of the University of London, which has been summoned for Tuesday, April 10th, at 5 P.M., the Annual Committee will present a report on the report of the Gresham University Commission. This report commences with a historical sketch of the connexion of Convocation with this movement and will explain the attitude which it is likely to adopt towards the scheme of the Commissioners. Convocation has consistently advocated the policy of enlarging the scope of the University of London by engrafting teaching upon its present examining functions. It carried a resolution to this effect moved by Lord Justice Fry on Feb. 24th, 1885. A scheme prepared by a special committee of Convocation was adopted by that body on June 29th, 1886, which had for its objects—(1) to bring the teachers, the examiners, and the Senate into closer relation with one another; (2) the revision of the affiliated Colleges, so as to give their representatives opportunities of deliberating with one another and of formally communicating with the Senate; (3) the promotion of higher University teaching; and (4) the increased representation of Convocation on the Senate. Negotiations were proceeding with the Senate when the petition of University and King's Colleges for the creation of a new University led to the appointment of the Royal Commission of 1888. The Commission reported on April 29th, 1889, and, whilst equally divided between the wisdom of remodelling the old University and creating a new one, advised unanimously that time should be allowed to the Senate and Convocation to consider whether they would apply for a new charter extending the functions of the University to teaching in accordance with the suggestions in the report. Schemes were drafted by the Senate, and counter-proposals were made by University and King's Colleges in which the committee of Convocation was not consulted. The committee, however, secured certain emendations in the Senate's scheme, and, among others, a recognition of "the proposal of Convocation to the effect that the University, in order to become a Teaching University, should take powers to establish professorships or lectureships for the furtherance of regular and liberal education and of original research, under which it was expected the University might be able to take under its direction the work here carried on by the London Society for the Extension of University Teaching." The Draft Charter of the Senate submitted to Convocation in May, 1891, was considered to be far less satisfactory for the interests of higher education and the welfare of the University than the scheme adopted by Convocation in 1886 or that of the Commissioners, from which it deviated in important particulars. In view of the new departures of the Senate it was naturally desired that Convocation, in whom the acceptance or refusal of a new Charter is vested, should have ample opportunity for "a full consideration of the case in all its bearings." By the ruling of the chair, however, the Senate's scheme, including the modifications of, and departures from, the Commissioners' suggestions, had to be accepted or rejected *en bloc*. It was rejected by 461 to 197. From this it will be seen that Convocation never had any opportunity of agreeing to or dissenting from the scheme of the Royal Commission of 1888, or of applying for such new Charter as was contemplated by the Commissioners of 1888 in the 37th clause of their report. The rejection by Convocation of the revised scheme was followed by the petition of University and King's Colleges for the foundation of a new University, at first called the Albert, but ultimately the Gresham University. This petition was considered by a Committee of the Privy Council and with some modifications was agreed to, but the Gresham University Charter failed in consequence of opposition in the House of Commons, where an address was carried without a division praying her Majesty to withhold her assent, and was referred to the Royal Commission, whose report has just been issued. Convocation entrusted its interests to the annual committee, who proceeded to draft a scheme for the reconstitution of the University, in

accordance with the previous resolutions of Convocation, and this scheme was approved by Convocation and adopted as a basis of conference with the Senate and the various institutions affected thereby. But the scheme was never presented to those institutions. It was also agreed that the scheme should be laid before the Royal Commission.

The report of the Commission is subjected in the report of the annual committee to a detailed examination, and the following are the main criticisms and objections raised to the scheme of the Commission :—

1. It is pointed out that, whereas the reference to the Commissioners was to form a scheme for the establishment *under charter* of an efficient Teaching University for London, the Commissioners propose a reconstitution of the University not under charter, which would have preserved to Convocation its right of veto, but *by statutory commission*, a method of procedure which formed no part of the Commission's reference. Having regard to the fact that Convocation has repeatedly affirmed its approval of a Teaching University and has carried several practical schemes for carrying it out, such an interference with the privileges of Convocation is regarded as most unjust and improper.

2. The scheme of the Commissioners appears to contemplate the establishment of a considerable variety in the standard of examinations and of graduation, for even in the final examinations for degrees the standard of knowledge for internal and external students is only to be identical "so far as identity is not inconsistent with the educational interests of either class," whatever that oracular phrase may mean. It also opens the door to an undue influence of teachers in the examination and tends to lower the standard which has given reputation to the degrees of the University. The schemes approved by Convocation have aimed at securing the collective influence of the teachers in advising the Senate upon the curriculum of education and range of examination, though excluding the participation of the teacher in the examination of his students. Convocation is at one with the view expressed by the Senate in 1887 in so modifying the University of London that the examinations should be conducted, as at present, by independent examiners, whilst the teachers should have the means of regularly communicating to the Senate their complaints, their wishes, and their views.

3. With regard to the additional facilities for research advocated by the Commissioners, the committee points out that it has been the consistent view held by Convocation that, in so far as the demand for a Teaching University for London was the expression of a desire for greater facilities both for the extension of University teaching and also for further means of post-graduate study and original research, it could be supplied only by creating a university professoriate. The scheme of Convocation of 1893 included among the purposes of the incorporation of the University the organisation of regular and liberal education throughout the British Empire, and especially in the metropolis and its neighbourhood, and the advancement of knowledge and encouragement of original research. It provided for the appointment by the Senate of professors, teachers, and demonstrators, with endowments from the funds of the University, and not only for the centralisation of instruction in the University itself, with its own lectures, laboratories, and libraries, but also for University teaching being given at various centres according to requirements, and further, for the national museums and libraries being made available for members and undergraduates, in consideration of their representation on the Senate.

4. In reference to the exclusion of provincial institutions from the list of schools of the University it is remarked: "In January, 1890, Convocation resolved that the conferring of special powers and privileges on certain institutions in or near London was incompatible with the fair and just treatment of the provincial colleges. The provincial colleges have no representatives, whilst the Colonies and India are allotted a senator apiece, to be nominated by the respective Secretaries of State." And again: "The provincial colleges, which have hitherto sent up so large a proportion of the graduates of the University, appear neither with direct representation on the Senate nor as schools of the University, nor yet as contributing indirectly to the Senate through the faculties or assemblies of the teachers. This is quite opposed to the views advocated by Convocation, and also to the policy of the University of London."

5. The Academic Council is described as the pivot upon which the whole work of the new University will turn. "It is a question whether, in view of the considerable executive powers admittedly vested in the Academic Council, any true control of that body by the unwieldy and heterogeneous Senate would not be impossible." It is also pointed out that, though the Commissioners think it necessary to check the freedom of the Council in one or two particulars, in neither case is the check to be exercised by the Senate of the University.

6. In regard to the relation of the University to existing public bodies it is remarked that "the Statutory Commission has, among its proposed duties," to receive the assents of various persons and bodies "other than the Crown and Convocation." Thus, the only body which at present has the chartered right to approve the surrender or alteration of the Charter of the University of London is to be unjustly denied the opportunity.

7. With respect to the constitution of the Senate, it is observed "the Senate of the present University is to disappear. The new Senate will consist of sixty-five members *plus* the Chancellor, who is to be elected for life by Convocation. This flattering concession to Convocation is more than neutralised by the serious reduction of Convocation's representatives which is proposed. Thus, instead of one-fourth of the Senate being appointed by Convocation, as is now the case and as the first Commission advised, and instead of an increase in representation such as all the schemes sanctioned by Convocation have included, the voice of Convocation in the management of the University is to be placed at the paltry proportion of one-seventh. At a time when the interests of the private and external students will stand in greater need of supervision and support the independent and democratic element in University management is to be minimised. No reason is given by the Commission for this retrograde proposal. Life membership, except in the case of the Chancellor, is to be abolished, and four years is to be the duration of office." It is also pointed out that "the federal method of effecting organic connexion of the University with the schools and colleges, objected to by the supporters of the professorial scheme, is in part accepted. Twenty-three members of the reconstituted Senate of sixty-six will be appointed directly by eighteen institutions, three more by two municipal bodies, and twenty-two more indirectly by the teachers of the University and its schools. Thus forty-eight of sixty-six of the proposed Senate will represent interests not at present represented upon the Senate of the University. Sixteen of the sixty-six will suffice for a quorum."

8 In addition to the variety of standards for the examinations of internal and external students, and the ambiguity of the language used in regard even to the identity of the final examinations for the first degree in each faculty, it is noteworthy that the matriculation is left an open question, and power is to be given to accept equivalent examinations or to admit without any.

9. *Ad eundem* and honorary degrees are to be conferred, and against these Convocation has set its face.

10 Convocation is to submit to a serious diminution of its privileges and influence: 1. Into its body are to be infused all future graduates and academic councillors who comply with regulations to be *ordained by the Senate*, not as heretofore by Convocation. 2. The number of members present at the decision of any question in Convocation is to be raised from thirty to fifty. 3. The determination of the mode of voting for its representatives on the Senate is to be taken away from Convocation, and is to be "in accordance with regulations laid down by the Senate." 4. In the selection of University schools Convocation is permitted no voice. 5. As long ago as 1878 Convocation made suggestions to the Senate with a view to the appointment of boards of studies. The representation of Convocation on the boards of studies to be constituted in each faculty, is not provided for although such representation was suggested by the first Commission. 6. The Charter of the University is to be abolished and the right of acceptance of a new Charter by Convocation is to be taken away. 7. The representation of Convocation on the Senate is to be reduced from one-fourth to less than one-seventh.

"In view of these important changes in the constitution, powers and privileges of Convocation, it is curious to note," observes the committee, "that the Commission claim in dealing with Convocation to have chiefly followed the terms of the present Charter."

11. With regard to medicine it is pointed out that Convocation objected to the provisions of the Senate's scheme of 1891,

under which the control of the pass M.B. would have been practically abandoned to the corporations in direct opposition to the recommendation of the first Royal Commission, whilst there was reason to fear that the powerful pressure of the corporations would soon lower the standard both of the Preliminary, Scientific and the M.D. examination, conferring the coveted title of Doctor, as without such changes the medical grievance would remain unredressed. The M.D. of the University would then become only the equivalent of the M.R.C.S. and L.R.C.P. "The Commission instead of meeting these objections and condemning, as the first Commission did, the delegation of quasi-university powers to colleges which have no academical character," entrenches itself behind the Senate's proposals, and believes that "little difficulty will be found in arriving at a mutual arrangement that will be satisfactory to both parties."

"The twelve medical schools in London would appear to be unequally and, in some cases, very hardly dealt with. The medical schools of University and King's Colleges, which are by no means the largest, will have obvious advantages.

"1. In the direct representation of those colleges on the senate.

"2. In the recognition of those colleges as university schools in all the faculties, and a consequent larger indirect representation of their teachers on the Senate and Academic Council.

"3. In the likelihood of their receiving students for the preliminary arts and science courses, and retaining them for medical graduation."

To sum up, the general feeling, both in the subcommittee which has drawn up the report and among the majority of the annual committee which has adopted it, is that the effect of the recommendations would be practically to sweep away the existing University and its Senate in favour of the teachers who, through the Academic Council in the new University, would be all-powerful, and that this is extremely unfair to a University which it is admitted on all hands has done admirable work in the past. It is considered, too, that the standard of degrees will be lowered, and it is noted—that is, proposed—that students may enter the University by "registration" as well as by matriculation, and that an ordinary school examination may possibly be accepted in lieu of the latter. The present scheme is thought by many to be inferior to all others that have preceded it. The medical question is shirked, the Commissioners contenting themselves with the suggestion that the University should have power to arrange with the Royal Colleges for conducting in common examinations in such portions of the subjects as might be determined by agreement. The Senate of the University having invited the Annual Committee to a conference on the report of the Commissioners, the meeting took place at the University at 4.30 P.M. on the 20th inst.

After this conference the following resolutions were passed by the annual committee at a most prolonged evening sitting, and they will be submitted to the special meeting of Convocation on April 10th.

1. That Convocation protests against the withdrawal without its consent of the Charter of the University of London as proposed by the Gresham Commission, and notes with satisfaction that the Commission quotes and does not dissent from the praise which the Commission of 1888 accorded to the University in respect of the manner in which it has fulfilled all the functions hitherto entrusted to it.

2. That Convocation reaffirms its desire that power should be conferred on the University of London to make better provision for teaching, for the advancement of learning, and for original research in London according to the schemes of 1836 and 1893 adopted by Convocation or with modifications thereof.

3. That Convocation is of opinion that the scheme recommended by the Gresham Commission does not contain sufficiently definite proposals for increasing efficient teaching in the metropolis, would tend to destroy the present work of the University, and would operate injuriously on higher education throughout the empire.

4. Convocation, therefore, although it would regret the establishment of a second university in London, is of opinion that it would be less disastrous to establish such a university with a distinctive title than to carry into effect the scheme of the Gresham Commission.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A MEETING of the Fellows of the above College was held on Monday last, the 19th inst., Dr. Russell Reynolds, President, in the chair. Reference is made elsewhere to the President's address and his re-election by what was practically the unanimous vote of the assembled Fellows. Prior to these proceedings the ordinary business of the College was transacted as follows:—

A letter from the Earl of Meath was read with regard to a proposal to lay out Trafalgar-square as a public garden. The subject was referred to the Finance Committee to report.

Dr. Poore and Dr. Seaton were nominated delegates of the College at the eighth International Congress of Hygiene and Demography to be held at Budapest in September.

A report was received from a Joint Committee of the two Royal Colleges on the report of the Royal Commission appointed to consider the Gresham University Charter. The discussion of this report was postponed to a special meeting of the College, to be held on April 5th.

A report from the Censors' Board on the Membership Examination was received and adopted.

It was resolved, on the motion of Sir W. Priestley, seconded by Dr. Pollock, Senior Censors, that Mr. Rudolf Lehmann be entrusted with the commission to paint a portrait of the late Sir Andrew Clark for preservation in the College, as a fitting memorial of the late President.

A report relating to the fees payable for the Fellowship and Membership, as well as a report from the Joint Finance Committee of the two Colleges, was received.

The resignation of his Membership by Dr. S. Nall was accepted.

The President stated that Mr. P. H. Cullen, student of the London Hospital, had on the nomination of the Presidents of the two Colleges, been appointed the first Jenks scholar.

THE PERILS OF FOOTBALL.

"You shall see them retiring home as from a pitched battle, with bloody pates, bones broken and out of joint, and such bruises as serve to shorten their days."[1]

AT the beginning of the year, struck by the monotonous regularity with which week by week accidents more or less serious were reported to have taken place on the football field—accidents that were now and again attended with fatal results—we gave a brief summary of those which had come to our knowledge and had been chronicled in our pages during the last quarter of the year 1893. We here reproduce that summary and add to it a similar summary of the accidents which have been reported during January, February and March of 1894. The summaries form a late but curiously exact justification of a certain worthy Mr. Stubbes, who thus wrote of football in the reign of Queen Elizabeth: "So that by this means sometimes their necks are broken, sometimes their backs, sometimes their legs, sometimes their arms."

Accidents at football during the last quarter of 1893.

2 Concussions of the Spine (in one of which it was stated that "three ribs were torn from the spinal column").
1 Concussion of the Brain.
1 Fracture of the Thigh.
16 Fractures of the Leg (this list including fractures of either or both bones and of simple or compound nature).
5 Fractures of the Arm (no particulars having reached us whether of the arm proper or of the forearm).
5 Deaths were reported.

Accidents at football during the expired portion of 1894.

1 Concussion of the Brain.
15 Fractures of the Leg.

[1] Carew: "The Survey of Cornwall, 1602." Quoted with copious context by Mr. Montague Shearman, in his excellent treatise on Football, written for the Badminton Library.

6 Fractures of the Collar-bone.
1 Fracture of the Shoulder-blade.
1 Fracture of the Arm.
5 Dislocated Shoulders.
1 Dislocated Knee.
To which must be added 6 undescribed cases of injury to legs, back, head, and abdomen, necessitating hospital treatment—3 of which resulted in death.
5 Deaths were reported.

In publishing the second list we must repeat what we previously said of the first, that we have made no special effort to obtain a complete roll of the casualties, but that we have simply recorded such as we have chanced to come across in the columns of our contemporaries. What proportion of the real mischief these may represent we do not know for certain, but as far as serious accidents are concerned the roll is probably fairly exhaustive: and, if this is so, the peril to life or limb run by each individual football player may not be very large when we take into account the enormous numbers who play the game. Certainly the danger is not so great as that run in the hunting field; and it is probable that if all the shooting fatalities which occur between the middle of August and the end of the following January were placed against the numbers who had carried guns for the same period the average danger to life among shooting men would be seen to be much higher than it is among football players, and the average danger to limb possibly quite as high. But the comparative danger of a sport is not the only thing to be considered. Because hunting and shooting have one measure of peril, and football perhaps another and slighter measure, there is nothing unmanly in dwelling upon that measure and inquiring if it, whatever its magnitude may be, cannot be yet further reduced. Surely the manliest of us, the most ardent supporter of the value that accrues to us as a nation by our hardy game-playing, will not go so far as to say that our sports derive their only, or even their chief merit from the element of danger that lies in them? Football is a dangerous game; it is also an excellent game; but if the danger can in any way be modified without spoiling the sport, surely something will be gained. And if the danger is increasing, with or without a corresponding increase in the position of the game as one of skill, it behoves serious people to consider to what cause the increased danger is due. A point to which later mention will be made is the enormous number of persons who regularly play football. Their number is pleaded as the necessary cause of a few accidents, and so is said really to speak for the safety of the game. That much has been allowed in the comparison of the danger of football with that of shooting; but the element of popularity is, to our mind, the very thing that makes it the business of everybody to inquire into the risks of football. The danger, whatever its measure, lies at the doors of every family. The men who shoot and who hunt belong to a small class—comparatively a very small class. Among them the measure of risk may be very high, but the general risk is nothing. On the other hand, all sorts and conditions of people play football—small boys, bigger boys, and men; people of delicate physique because their companions play; people loving all sorts of athletics; people desiring the modicum of exercise that will keep their muscles in tone; people wanting recreation; and people who play for a livelihood. Therefore the measure of risk incurred in the game is a matter of general, almost public, urgency. Also it will often happen that the football player is the pecuniary stay of his family, not by his professional pay as a football player, but by his wages derived from his ordinary employment. If he is incapacitated in any way for work the loss becomes very serious for those dependent upon him.

We are not prepared with any figures to show that the Association game is more dangerous than Rugby Union or the reverse, for our records of disaster have been mainly taken from non-sporting journals, to which the technical distinctions between the two branches of the game have very generally appeared to be unworthy of mention; but it is proposed to consider both games from three points of view, represented by the three questions: (1) Is football dangerous? (2) is the danger increasing? and (3) would any modifications of the present laws lessen it? But the first question requires no discussion. That there is actual danger cannot, we think, be denied. The accidents daily chronicled prove it, and the popularity of the game makes the danger widespread.

The Association Game.

The English Association was founded in 1863; but the establishment of Association cup-ties, which took place nine years later, may be said to really mark the first public recognition of the Association game, and to have been its first step towards the enormous popularity which it now enjoys, and possibly its first step towards becoming dangerous. During the last twenty years the game has undergone considerable transformation, which was only to be expected. There were small differences in the codes of the clubs who joined the Association, which necessarily led to different tactics in different districts. But a very short time sufficed to bring all Association players into one fold, and Association has now for many years crystallised into a unanimously adopted set of rules, and played with fairly unanimous tactics. It has also in our opinion become more dangerous. With the enormous increase in the popularity of the dribbling game, and with the introduction of professionalism, there has come about a precision in passing which in its turn has led to an increase in the general pace with which the game is played. In the olden time a man stuck to the ball till he lost it. His tortuous course across the ground was often comparatively slow from the commencement, and necessarily slow if he was successful in retaining the ball any length of time. Nowadays the ball is hurried along by combined effort, being bandied from man to man as each runs at the top of his speed. Collisions were more frequent, as the man in possession of the ball was the mark for a charge, but it stands to reason that the results of such a charge were not likely to be so serious. In the selfish tactics which were "the game" as originally played, a man was often spent before he came into collision with an opponent, and if either the charger or the chargee is a spent man not much harm, we know, can come of a charge. But in the modern game the charge most frequently occurs in this manner: A running at full speed transfers the ball to B, who is on his own side, and also running at full speed, and in so doing places it between B and C, who is an opponent, and running at full speed towards B. B and C come together. Neither of these people are spent by a long dribble. Starting perhaps from twenty paces apart only, they make for the ball. If one reaches it before the other he can effect his stroke, possibly avoid the charge if he desires to, and all will be well. The situation constitutes seven-eighths of the game, and therefore almost invariably all *is* well. But if B and C arrive at the ball together there may be an accident, though generally, again, all is well. For, whether their bodies collide, their kicking legs cross, or one receives the misdirected kick of the other, men cannot dash together recklessly without the chance of an accident. (Boys may, and we have not lost sight of the point that age is a factor to be reckoned with.) The accidents from kicks and collisions in the modern game must necessarily be more severe than they were wont to be in the older, slower, and less scientific sport from which the Association game has been evolved. This, it is our belief, cannot be avoided. Any conceivable step (we cannot suggest a practical one ourselves) to obviate such accidents would have to be taken in the direction of modifying the pace. And any such step would tend to spoil the game. But the accidents if more severe are less frequent.

The Rugby Union Game.

This, the senior of the two games, is an outcome of the original Rugby School game, where everybody could pick up the ball and run with it when he liked, while his opponents could stop him by hacking over, charging, or collaring. The rules were definitely settled by the Rugby Union some five-and-twenty years ago, and we have no reason to say more of them here than to point out that their developments have none of them been towards danger, except in one way—the increase of pace. The game has become loose—that is to say, dribbling in the open and passing rather than tight scrummaging has been accepted as "the game" for some twelve years; and for an account of the evolution of Rugby Union we refer all whom the subject may interest to Mr. Montague Shearman's book, to which we have already referred. With the abolition of the tight scrummage the premium on heavyweights disappeared, and the present importance of accurate passing and rapid sprinting came into vogue; and if some dangers disappeared under this universal change in tactics, others were called into existence. We have already pointed out, in talking of the Association code, the obvious fact that, all other things being equal, the charge between two rapidly moving players must be fraught with danger in proportion to the pace at which they are travelling. In Association the

danger, roughly speaking, divide themselves into two, those from hacks and those from collisions. In Rugby Union we have the dangers from collaring added; but the danger from collisions is very much less pronounced, for the opposing players are able to use their hands and arms as buffers. In collaring an increase of pace must mean an increase of danger. A man who is torn down while running at the top of his speed—as the properly fed three-quarter back very generally will be running—may evidently sustain a nasty shock; and the player who dashes in to meet and hold him in spite of the impetus of his rapidity runs an identical risk. On the other hand, the loosening of the scrimmages and the practice of the combination run rather than the individual run should be improvements from the point of view of danger. The severity of the accidents may be increased, but the frequency should be diminished. Accidental hacks must still occur, but they will not be so severe as those received in the purely dribbling game, for the oval ball prevents rapid strokes with the foot being very usual, while the blind, dangerous kicking formerly indulged in by some of the old-fashioned shovers has quite disappeared. The practice of passing has also done away with the vigorous fending-off which constituted a valuable portion of the science of the ancient runner. Nowadays, when collaring is imminent (or before) the runner, if he knows the elements of the game, will generally transfer the ball. In olden times it was only too common a practice for him to fight, tucking the ball under one arm and practically lashing out with the other; for some of the motions by which a certain class of strong selfish players would attempt to carry the ball through a *mêlée* can only be described as lashing out. This kind of thing is now obsolete in good football, and must tend in time to become obsolete everywhere.

It will be seen that it is our opinion that Association, at first sight a tame game compared with the other, is possibly more perilous than Rugby Union; and that its modern developments, though in many ways so similar, are more certainly towards danger than are the developments in the tactics of the older branch. Minor injuries may be more frequent in the Rugby game, but serious accidents should be rarer. But absence of details makes this only an expression of opinion.

The Influence of Professionalism.

Increased danger arising from an increased pace in the play of either game cannot be obviated. The games have improved in so many ways by increase in pace that if the rules could be modified it still would be wrong, from a sporting point of view, to modify them. In addition to which, the danger will tend to obviate itself. The longer that a strictly combined game—whether under Association or Rugby Union rules—is played at schools, and the earlier the young footballer learns to judge with precision and at a half-glance his distance from an opponent and from the ball, the fewer accidents will occur. But there is something in football beyond tactics, and that is the spirit in which the game is played. In many conjunctions of both games, we might almost say throughout them, the spirit in which they are played is the principal determining factor in the measure of their danger. Now there can be no doubt that the introduction of professionalism, with its attendant train of gate-money, prize-money, betting, and weekly wage, has been a severe test to the sporting spirit of the game. The following illustrations of our meaning are drawn from the Association game—in which professionalism is not only rife but an acknowledged thing. It will occasionally be the duty of a player, generally of a half-back, to actually stop dead, or nearly dead, before "heading" a ball, during which time he will be necessarily compelled to keep his eyes in the air—i.e., on the ball—if he is to receive it fairly upon the vertex of his skull. If he has so to stand—it is a position which a clever player will not often be forced into—he is defenceless. He is not in a strong pose to receive a charge and can have no eye left for an assailant. Such a man can be charged in two ways. To spoil his stroke nothing whatever is required but to shift him a foot or two; yet no law can possibly decide the force which it may be permissible for the charger to use. This must be dictated by circumstances and a sense of what should be the true sportsman's conduct. To smash cruelly into him and knock him over unnecessarily and perhaps savagely is clearly a brutality, *which is permitted by the rules.* If the charger has to run at topmost speed to arrive at the would-be header in time to prevent the head-stroke, he cannot be expected to graduate the force of their contact; but this is not always the case, and to every player instances which he has seen of totally unnecessary violence will come to mind. Again, the increased rapidity of the game allows a certain amount of tripping and hacking to go by unperceived or to pass as pure accident. In the old game, where two people at a given moment were the only ones engaged with the ball, all eyes were on them, and neither could trip or hack the other unobserved; but in the rapid close passing that occurs in the modern game, it is impossible to say whether a misdirected kick has been the outcome of accident or of malice aforethought. Here no new rule or modification of an old one can cope with the mischief. An error in judgment, of pace or direction may result in the delivery or the reception of a dangerous hack; and, it may be noted, that just as it is the duffer who kills his man out shooting, so it is apt to be the unskilful player who does the damage, and no referee could always and unerringly decide whether such a hack was accidental or malicious. These form two examples of instances where the spirit in which the game is played determines the measure of danger. Hundreds of similar cases—that is, cases where the temper of the player decides the measure of danger—will occur to the recollection of every player of either rules. We give one example of a hundred that might occur in Rugby. Two players tackle the man who is running with the ball. One stops his rush, practically holding him up. The second man has now nothing to do but to put his arms round the arrested runner in such a way as to prevent him from passing the ball to anyone on his own side—in such a way as to render the ball "held." This motion can be effectively made as gentle as a lover's embrace. Yet how often is it done almost savagely? And have we never seen it done quite savagely? What referee can say for certain what is a legitimate piece of holding, and what an unfair piece of scragging? Now no laws can be laid down for the regulation of temper and the maintenance of a due sense of sporting seemliness. These things can only be provided for by the general sense of the players, the authority of a wise captain, and the rigorous punishment of any offender detected in illegal practices, if not of the whole team of which he is a member. It is our belief that such practices are on the increase, and we speak with no silly disrespect for bread-winners when we say that the increase has been due to the introduction of professionalism and proportional to the spread of professionalism. The professional is drawn from a different class in life to the gentleman, and for this reason is more likely to seriously resent defeat or misfortune in the game. He has not learned in some big school, from lessons roughly administered, the absolute necessity for keeping his temper and of acknowledging the referee as paramount; while the element of money is introduced into his calculations. It is his livelihood to play in the manner most likely to prove useful to his side, and he, unfortunately, feels that his gallery, if not his employers, desire in the first place victory, the means by which victory is attained coming second only. For victory is a very important thing to a professional club. The monetary position of many of these clubs is by no means good, and large gates, which are mainly obtained by successful records, are necessary to make ends meet. We have here, in the Association game, an undisciplined lust for conquest, backed by the most practical reasons of all—pecuniary.

The Rugby Football Union has set its face against professionalism wholly. "Professionalism," its by-laws say, "is illegal," and the definition of the word, according to the Union, is sweeping and inclusive.

General Conclusions.

It will be urged that we have left the subject very much as we found it, but that will not be the case if anything we have said should lead those in authority in either game to consider the measure of its danger, its causes, its growth, and its possible remedies. The importance of football cannot be over-estimated as a source of popular and health-giving amusement. The game is exactly fitted by its splendid athletic possibilities, as much as by the moderation of its demands upon the time and purse of its votaries, to be a truly national sport. We shall be understood therefore to thoroughly appreciate and entirely sympathise with the jealousy with which thousands must regard any attempt to bring the game into disrepute by stigmatising it as brutal. But this is what we have not done. We have given an imperfect list of casualties, and in doing so we ask whether their frequency, whatever that may amount to, cannot be reduced. When we learn weekly, if

not daily, of serious accidents, and read of players being ordered from the ground for foul play, and of referees being mobbed by dissatisfied partisans, we cannot be far wrong in concluding that an element has got into the game which requires to be mended or ended. That the element need not be the result of professionalism only, in spite of the importance we have laid upon its influence, is suggested by the amicable relations subsisting between the gentleman and player at cricket, and by the absolute autocracy of the umpire being as unimpeachable in the professional cricket match as in the amateur cricket match. Again, the Rugby Union does not permit, or, at any rate, recognise, professionalism, but unnecessary roughness still occurs in games played under the Rugby Union rules.

We answer our own three questions as follows: (1) football is dangerous; (2) the dangers have in some directions increased and in others diminished; and (3), as far as we can see, no modification in the laws which might arrest the dangers would leave the game as good a one as it is now from the athletic point of view. To the last answer the practice of heading affords a possible exception. More than one first-class and experienced player is uncertain whether heading, though it requires high skill and absolute accuracy for its successful performance, really adds anything to the merits of the Association game, and with its abolition one source of danger would disappear. If the laws cannot be modified, still, having the example of cricket before our eyes, we would ask whether practical steps cannot be taken to ensure a better spirit. Into cricket, of course, it must be remembered that the element of personal conflict does not enter, and it is this that is largely responsible for dangerous losses of temper. It is a more deliberate and cooler game and less likely to result in acrimonious retaliation; but that does not entirely account for the fact that no one who plays ever dreams of trying to damage an opponent or dispute an umpire's decision. Placability and deference are as much part of a good cricketer's panoply as his pads or his spikes. Can nothing be done to induce the football player to don something of these virtues with his parti-coloured shirt or jersey? It will follow from what we have said that our only suggestion is a drastic penal code. The influence of good school tradition or a strong right-minded captain will do so much that certain teams will always play in the proper spirit. Rich or poor, amateur or professional, they will be gentlemen. But for the clubs who do not exhibit this spirit and who give the authorities any handle against them by transgression of the letter of the law there should be the shortest shrift. We may fairly take credit to ourselves for the fact that the increase which has of late taken place in the powers of the referees, and without which undoubtedly the perils of football would be still more marked, was insisted upon as a necessity in our pages several years ago. But the powers must be further extended and the penalties for foul play and insubordinate behaviour made more prohibitive.

THE LONDON COUNTY COUNCIL AND THE LONDON WATER-SUPPLIES.[1]

II.

As might have been expected, the evidence given before the Royal Commission on the metropolitan water-supply has revived the question, which has given rise to considerable contention amongst experts during late years, of the value of chemical analysis in deciding the fitness of a water for potable purposes, and it is not surprising to find in the critical report presented to the London County Council, drawn up respectively by the chairman of the Water Committee, the chief engineer, the parliamentary agent, the medical officer, and the chemist, that some emphasis is laid upon the evidence of certain witnesses who have expressed doubt as to the value of chemical analysis. The importance of obtaining a definite pronouncement on this point is obvious when it is considered how grave may be the issues of a misinterpretation of the results afforded by an examination that is exclusively chemical. Is the chemist justified in giving either a decisive negative or positive opinion as to the fitness of a water for drinking purposes when his conclusions are based in the main upon the results of chemical analysis? In considering this question it is necessary to turn for a while to the data derived from and the processes employed in chemical examination, and the present affords an opportunity of reviewing as succinctly as possible without sacrificing any essentials the evidence which a chemical analysis furnishes which is supposed to enable the chemist to pronounce upon the quality of water for potable purposes. We may accordingly dismiss those analytical particulars which, although frequently sought for, do not appear to or are not regarded as throwing any useful light upon the sanitary condition of any sample under consideration.

An analysis of water made with a view of determining its quality from a hygienic standpoint is generally confined to the determination of the total solid matters, the free or saline ammonia, albuminoid ammonia (supplemented by a determination of the organic carbon and nitrogen), chlorine, nitrogen as nitrates or nitrites (inorganic nitrogen), and the "oxygen absorbed" in a given time. It is not necessary to describe the various processes involved in the analysis, which are of an extremely delicate kind, but it will be sufficient to consider what is the significance of these constituents when they are present in varying amount, or what is the inference to be drawn when they are entirely absent. The forms in which nitrogen (the element which betrays the presence of sewage matter) exists in water-supplies may first be considered. It may exist as free ammonia (NH_3), in organic matter (albuminoids), or in the oxidised form of nitrate or nitrite. Nitrogen in the form of ammonia is estimated because this compound is often derived from animal matters just beginning to decompose, and its presence therefore gives an indication of the recent, and probably present, existence of animal pollution. Sewage contains a large quantity of nitrogen as ammonia and so do waters to which sewage has access. The determination of the so-called albuminoid ammonia is undertaken to give some measure of the nitrogenous constituents, since under the influence of a boiling solution of alkaline permanganate they, and especially the readily putrescible bodies, yield their nitrogen in the form of ammonia. A more exact estimate of the organic matter is made, however, by determining the total organic carbon and nitrogen. It is concluded that the smaller the aggregate proportion of organic carbon and nitrogen the better is the quality of the water; but the relative proportion of these elements gives in some cases a clue to the nature of the organic matter present. Thus, if in surface water the proportion be as low as 3 per cent., the organic matter is of animal origin; if it be as high as 8, it is chiefly, if not entirely, of vegetable origin. In the case of spring and deep well water, however, little importance can be attached to the relative proportion of the organic elements, because in such waters the proportion of carbon to nitrogen is often low, even when the organic matter has been derived from vegetable sources. Dr. Frankland, however, maintains that in these cases the organic carbon should not much exceed 0·1 per cent. in 100,000. (This statement affords, in passing, some idea of the remarkable delicacy and accuracy of one of the processes at the disposal of the chemist). Water from deep wells and springs shows the smallest quantities of organic elements, the thick strata through which the water has passed having converted by oxidation most of the organic into inorganic matter. The nitrogen then passes into the form of nitrate or nitrite, or under certain circumstances may even be eliminated as nitrogen and returned to the air. The determination of nitrates is of the utmost importance, and should on no account be neglected; it is, indeed, one of the most valuable factors in a chemical analysis in affording evidence of the quality and history of the water. This we must accept when we consider

[1] The previous article was published in THE LANCET, March 10th, 1894.

that experience has shown[2] that by far the majority of waters can at most derive from one-tenth to two-tenths of a grain of nitrogen as nitrate per gallon from sources other than animal matter—that practically the whole of the nitrogen of sewage may be oxidised into nitrate *without materially diminishing the risk involved in drinking it.* "The one most characteristic constituent of sewage is nitrogen; in the absence of nitrogen in some form of combination *it cannot be said that water is polluted with sewage.* This nitrogen, contained in the original excrement as a constituent of organic compounds, assumes, as it were, a series of disguises under the influence of a succession of fermentative processes, appearing at one time as ammonia, at another as nitrite, at a third as nitrate, and so on, probably becoming, at no distant period, the free element. All this time it may be accompanied by the specific infective matter of cholera, enteric fever, and probably other diseases."[3] On the other hand, it can hardly be contested that the existence of nitrates may always be taken to indicate with certainty the coexistence of infective matter, but that it affords strong ground for suspecting the occurrence of sewage pollution at some time or other there is little doubt, and that alone would suffice in our opinion to condemn a water for drinking purposes. The oxygen absorbed by the water from permanganate is, when certain precautions are taken, a measure of the organic purity of the water, and varies generally directly with the organic carbon, so that it may be regarded as a process supplementary to the search for organic carbon. In the same way the colour determination affords also confirmatory evidence of the proportion of organic matter, since an increase in the degree of brown (blue being the natural colour of water itself) follows with the increase of organic carbon. The presence of polluting matter, it may be added, and especially sewage, cannot be inferred with confidence from the chlorine in water unless it is found in proportions very considerably in excess of the normal, on account of the variation occurring in natural samples, whilst in the case of waters from places near the sea the estimate becomes valueless. Lastly, the proportion of solid residue left on evaporation affords an approximate, though rather rough, indication of the comparative purity of water, as in submitting it to ignition a darkening, with evolution of a disagreeable characteristic odour, would indicate sewage matters, while the odour similarly derived from vegetable matter is quite distinct—the difference is readily perceived after a little practice.

These, then, are the particulars furnished on analysis which are at the disposal of the chemist to assist him to express an opinion on the quality of a water for drinking purposes. It is evident that the weak point in chemical analysis is that, while from the results the chemist can cast suspicion upon a water, he has no certain ground to go upon which would enable him to affirm with absolute assurance that the water could be drunk with impunity and with confidence—that it is free, in fact, from any source of danger. Thus, although a water may contain products which the chemist considers are derived from sewage matter (ammonia, nitrates, and chlorides, for example), these things in themselves are not necessarily noxious; but in their presence he is justified in regarding the water with suspicion. To condemn is, at any rate, a safe course, and one which he is prone to adopt in view of the doubtful value of chemical negative results, for, on the other hand, an entire freedom from these bodies, though indicating chemical, does not necessarily indicate bacterial purity. Thus, to take one example, if the nitrates had been eliminated by various agencies, including that of vegetation, so that the nitrogen had reached, as shown in a preceding paragraph, the elementary condition, the fact of the absence of this body would not warrant a favourable opinion. Dr. Klein made some very strong observations on this point before the Royal Commission. He very distinctly said that the chemical examination of water has in a sanitary respect, he would not say no value, but a very limited value, and much more limited than is put forward by chemists. He regarded the examination in a *chemical sense* of the amount of organic impurity in water as not, in the eyes of sanitarians, of much value. Indeed, it is perfectly possible, he added, by way of illustration, to arrange fluids which contain a large amount of pathogenic material which a chemist, if he were to test it for organic matter, could not detect, because it would be in such small traces. On the other hand chemical experts have urged that it is not unreasonable to expect that pathogenic organisms would be found in a water-supply coexistent with organic matters suited to their environment and traceable by chemical analysis. Dr. Odling, for example, in his evidence before the Commission, contended that when water is free from organic matter its condition is opposed to the growth of pathogenic organisms; and where its condition is opposed to the growth of pathogenic organisms, and where its freedom from organic matter persists, it is evidence that there is no more pollution of the water than its powers are capable of getting rid of. Experience would seem to teach, however, as in the epidemics at Worthing, Caterham, and elsewhere, that a water-supply can be dangerously polluted and be the means of disseminating disease without affording the least evidence on chemical analysis, despite the admirable and extreme delicacy of the methods employed.

To sum up, the position, we are inclined to think, is exactly that which is well expressed in a paragraph in the annual report of the medical officer of health of the Local Government Board for 1889, and quoted by Mr. Binnie in the memorandum and report he has recently presented to the County Council. "We have no reason for believing," the paragraph runs, "that the quantity of disease-producing material in a water, or the likelihood of the water possessing harmful qualities, is proportionate to the total organic matter or to the total animal matter present in the water. The utmost that we have been able to say is that there has been greater opportunity for the entrance of the material of disease into water than can be recognised by the chemist as foul with organic matter, and we have surmised that the material of disease on entering such water may obtain opportunity of sustaining or multiplying itself. The lesson is taught afresh and significantly by Dr. Cory's report that, while we must ever be on the watch for the indications that chemistry affords of contaminating matters gaining access to our waters, we must (at any rate, until other methods are undiscovered) go beyond the laboratory for evidence of any drinking water being free from dangerous or organic pollution. Unless the chemist is well acquainted with the origin and liabilities of the water he is examining, he is not justified in speaking of a water as safe or wholesome if it contain any trace whatever of organic matter—hardly, indeed, if it contain none of such matter appreciable by his very delicate methods. The chemist can, in brief, tell us of impurity and hazard, but not of purity and safety. For information about these we must go, with the aid of what the chemist has been able to tell us, in search of the conditions surrounding water courses and affecting water services." Sir George Buchanan went even further, however, and said that the detection of what is injurious and what is not injurious cannot be accomplished by chemical, microscopical, or bacteriological process. With the value of bacteriological analysis we will not deal in the present article beyond noting that the Royal Commissioners state that these bacteriological questions are not matters "concerning which it would become them to

[2] Water Analysis—the Interpretation of Results; by F. Wallis Stoddart.
[3] Ibid

make positive and dogmatical assertion, seeing that at present experts in the science of bacteriology are themselves avowedly holding their judgment in suspense."[4]

It is a remarkable fact, however, which we may not dismiss from our minds, that for more than thirty years the inhabitants of London, numbering 2,500,000 to 5,000,000, have been drinking water from the Lea and from the Thames above Teddington without a single instance, according to the evidence of medical men and others in the report (and the statement has, as far as we know, gone unchallenged) of disease occurring which could be traced to the consumption of this water, and that during that time thousands of chemical analyses have been made the results of which have led the chemical experts to approve of the quality of the water for drinking purposes.

THE NATIONAL ASSEMBLY AND THE DRAINAGE OF PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

(Concluded from page 634.)

THE debate, we have seen, was commenced by an attack on the scheme proposed by the Government Commission, in so far, at least, as the disposal of sewage is concerned. M. Georges Berger objected to the sewer farms and urged that a larger sum should be obtained and that a canal or sewer should be built to the sea, giving agriculturists the opportunity of utilising some of the water if they chose. What was not employed in agriculture could, without doing any harm, be thrown into the sea.

M. Bourgoin, chemist to the Assistance Publique, replied, and delivered a very clear and instructive speech. He commenced by remarking that cesspools were first established in Paris under Francis I. in the year 1539. It was about time that they should contrive something better. In Brussels they had abolished cesspools; and, as a result, the annual mortality from typhoid fever had been reduced from 105 to 25 per 100,000 of the population. At Berlin the mortality from that disease had been reduced to one half; and at Gennevilliers, where a portion of the Paris sewage was used for cultivation and was supposed to cause so many evils, the mortality, which was equal to 32 per 1000 in 1875, was now only 26 per 1000. The infantile mortality, which was 14·18 before the creation of the sewage farm, is now 12·23; so that the pouring of Paris sewage on the plains of Gennevilliers had coincided with a marked reduction of the death-rate of the population living on the spot. There was no reason, therefore, to fear that sewage farms affected the health of the surrounding population. In Paris the water-supply was 240 litres per head per day. Ninety litres of this water came from springs and was pure drinking water. The supply at Berlin, where cesspools had been abolished, was only 75 litres, at Leeds 80, at Brussels 150, at London 175, and at St. Petersburg 220 litres. He knew of only one town where the supply was more abundant than in Paris, and that was Rome, where it was 1000 litres of water per day per inhabitant. For the Paris sewers there were actually 1500 automatic flushing tanks; it would be necessary to raise this number to 3500, and the town had recently purchased two new sources of spring water—the Lunain and the Loing—which would increase the supply of drinking water by 50,000 cubic metres per day. M. Georges Berry interrupted to say that, in spite of this, there were still 16,000 houses in Paris which had no spring water to drink. M. Bourgoin replied that last year, in spite of the exceptional dryness of the weather, the supply of spring water never ran short; and as this supply was about to be increased he thought there would be water enough to flush all the private and public drains when the cesspools were abolished.

The sewage of Paris would amount to about 375,000 cubic metres per day; and as to this there should be added 50,000 cubic metres of sewage from the immediate suburbs the problem was how to dispose daily of about 425,000 cubic metres of sewage. To his knowledge more than 600 patents had been taken out dealing with this question. Was it possible to deal chemically with such a volume of water? M. Bourgoin described various processes employed, but maintained that the sewage was only temporarily purified; in a few days fermentation set up again. At Glasgow attempts of this sort had failed, but Edinburgh had been more successful in throwing its sewage on sand, which had thus been converted into prairie land. M. Berteaux interrupted, saying that he had lived at Edinburgh, that the land in question sloped towards the sea, and that consequently the sewage not required for irrigation flowed freely into the sea. Chemistry had so often surprised the world, M. Bourgoin went on to remark, that it might perhaps one day solve the problem. As yet, however, this had not been done. He was convinced that the sewage of Paris could not be satisfactorily treated by chemical means. Should they, then, build a sewer from Paris to the sea? Several engineers had drawn up plans to that effect, but most of these plans proposed to tap the sewer on its way to the sea so that some of the sewage it contained might be used for agricultural purposes. If, then, it was safe to use sewage for agricultural purposes at a considerable distance from Paris, why then go so far as the sea? why not use all the sewage in the neighbourhood of Paris? The sewer to the sea had been proposed in the Chambers in 1888 by Raspail and rejected, and in the Senate by M. Léon Say, when it was rejected after some observations from Professor Cornil. In 1889 the proposal was again thrown out, when Parliament received the very remarkable report prepared by Dr. Bourneville. Finally, in 1892, the scheme was again set aside at the request of M. Loubet, who was then the Premier. People imagine that the proposal is not acceptable on account of the expense. This is a mistake; the real fact is that the sea absolutely refuses to accept sewage—it rejects and throws it back on to the shore. Sewage can only be thrown into the sea during the three hours that precede the high tide; then sufficient incorporation takes place for the sewage to be carried right away. But in that case it is necessary to have large reservoirs, and for Paris a reservoir eight metres deep, fifty metres wide, and 1000 metres long would be required. Indeed, two such reservoirs would be needed, so that one might be used while the deposits formed in the other might be cleared out. And what would be done with the sludge that would undoubtedly accumulate while the sewage was waiting for the tide.

Towns that have drained directly into the sea, M. Bourgoin continued, have had to renounce the practice. In South America the town of Rio de Janeiro has ceased to drain into the sea because it infected its port. The same may be said of the towns of Providence in the United States and of Plymouth in England. Dover and Brighton drain into the sea, but both towns are anxiously on the look-out for some other method of dealing with their sewage. The municipality of Barcelona is studying a scheme to establish sewage farms, so as to avoid its present practice of draining into the sea. To spare the beautiful Bay of Naples plans are being prepared so as to discharge the sewage south of the town. Nor has the great town of London, in spite of the immense sums of money spent, succeeded in solving the difficulty, and the sewage has been brought back to the very windows of the Houses of Parliament. The great English chemists, Frankland and Hofmann, have tried everything they could imagine to purify the waters of the sewers—lime, chloride of sodium, perchloride of iron, carbon, carbolic acid, &c. and have not attained any satisfactory result. The experiments of Way show that lime is of no use, for the water soon becomes foul again. Therefore M. Bourgoin concluded with the great chemists, Chevreul, Boussingault, and Dumas, that "it is necessary to restore to the soil the fertilising elements which are taken from the soil with the harvests, and which the inhabitants of towns assimilate, immobilise, destroy, or lose in throwing them into the sea by the intermediary of the rivers," or, again, as Dumas said, "All agriculture which does not reconstitute the soil is condemned; all urban populations which waste their own dejecta prepare their own suicide."

At Gennevilliers, M. Bourgoin went on to remark, the sewage was distributed through little trenches varying from 25 to 40 centimetres in depth, and separated by beds of from 1 to 4 metres in width. With an apparatus invented at Reims by M. Bonna the fertilising matter is thrown up from these trenches on to the beds. The

[4] Compare also an incident in the cholera epidemic at Altona described by Dr. Percy Frankland in Nature, Feb. 22nd, 1894.

soluble matter is burnt by the oxygen of the air and is converted into simple organic substances, principally humus, salts of ammonia transformed into nitrates of potassium and lime, and, above all, there is a large production of carbonic acid. This acid is absorbed by the roots of the plants; it then reaches the green portions or leaves, where it is decomposed, and loses its carbon and a part of its oxygen; the rest is thrown out into the atmosphere. But in order that this decomposition should take place a reagent is necessary, and that reagent is light. The decomposition is instantly produced in virtue of an action which we have not yet been able to imitate in our laboratories. Thus is produced under the influence of the soil and the air that admirable cycle of transformations which constitute the movement of life. The sewage of Paris must be utilised and not wasted; but we are told that in accumulating on a restricted space millions and milliards of microbes we shall produce untold calamities. It is true that there has been no epidemic due to microbes at Gennevilliers; but then we are again told that the microbes are only sleeping, that they will awake one day with terrible effect. They had, however, been sleeping now for twenty years on the plains of Gennevilliers; this seemed more like lethargy than sleep. These microbes had been searched for over and over again, but could not be found at a depth of from 75 to 80 centimetres; and the sewage water when it came out from under the sewage farm was free from bacteria; it was so pure that he (M. Bourgoin) had drunk it and yet lived to relate the deed. He therefore concluded that the best way of disposing of sewage was to use it for agricultural purposes; but he did not quite agree with the Government proposals. Taking into consideration the new supplies of water that were to be brought to Paris, they would ultimately have 450,000 cubic metres of sewage per day; multiplying this by 365 or 366 days and dividing by 40,000, the result was 3875.

The sewage farms, so as not to receive more than 40,000 cubic metres of sewage per hectare per annum, should measure 3875 hectares in extent. That might do if it was simply a question of filtering the water, but for agriculture the amount of water employed was not the same each month. The Government scheme proposed 3500 hectares, but he (M. Bourgoin) thought from 7000 to 8000 hectares would be necessary, and he should not object to 12,000 hectares. Within twenty-five to thirty kilometres from the walls of Paris this amount of suitable land could easily be found in the valleys of the Seine, the Oise, and the Marne. The districts irrigated would be enriched and their population increased. At Gennevilliers the population had been increased by the sewage farms from 1500 to 6000 inhabitants, and the health of the people had likewise improved. This blessing could, without fear, be extended to other localities.

Such were the principal arguments adduced by M. Bourgoin in a speech which was listened to with marked attention and was frequently applauded. Neither the friends nor the foes of the scheme had anticipated that such a speech would be delivered. It came quite as a surprise upon the Assembly, and there were but comparatively few members present. M. Bourgoin, on descending from the Tribune, was warmly congratulated. The members of the Government Commission were especially pleased, and crowded round to shake hands and to express their satisfaction. The Assembly then adjourned the debate.

THE ARMY ESTIMATES FOR 1894-95.

THE estimates for 1894-95 amount to £18,081,000—an increase of £278,100 over those of 1893-94. There is a net reduction of £30,000 on the non-effective votes as compared with 1893-94. Under the head of medical establishments, pay, &c., the net estimate for 1894-95 is £290,000, being an increase of £1800 on the preceding year. The sub-heads under which this vote is accounted for are—pay, &c, of medical staff, £226,100; contingencies of medical staff, £1300; pay of militia medical officers and civilian practitioners, &c., £10,890; corps pay and extra duty pay of medical staff corps, nurses, clerks and other subordinates, £37,000; cost of medicines, &c., £16,000. The total number of medical staff, British establishment, in 1894-95, is 615, and the total numbers on the Indian establishment 335, making together 950 of all ranks. The estimate for the Army Medical School, Netley, is £7400; that for the Royal Military Academy £34,400; for the Royal Military College £43,700; and that for the Staff College £8000. The total pay of the medical staff corps amounts to £74,700. The Director-General's office comes, of course, under the staff of the War Office.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Wirksworth Urban Sanitary District.—The infantile mortality for this district for 1893 was 194·6 per 1000 births, and the zymotic death-rate 3·4 per 1000 of the population. The general death-rate (23·99 per 1000) was the highest yet recorded, and Mr. A. E. Broster thinks it may have had some relation to the prolonged drought of last year. During the prevalence of small-pox, a small corrugated iron hospital was erected by private philanthropy, and it appears that it is now proposed that the sanitary authority shall purchase it for the use of their district. This is another instance of the unsatisfactory manner in which so-called hospital provision is made. Mr. Broster, in discussing measles, points out to his sanitary authority that the disease may, at their option, be included among the notifiable diseases, but he adds: "It would be a serious item to pay for 300 or 400 cases of measles at half-a-crown each." Naturally notification cannot be carried out for nothing, and the question is rather whether the expenditure would be justified in this individual instance. Mr. Broster remarks, in a paragraph or two later: "If we could prevent infected families from returning to school until risk of infection is over it would curtail an epidemic." Surely the notification of measles is the very way to bring about this result, as it would enable notice to be given to the schoolmasters to receive no children from infected houses until a certain date. The sewerage of the district appears to be very unsatisfactory and, as is so often the case, there are no plans of the sewers that do exist. Part of the sewage is poured into a mill dam and part into mine shafts and lead workings under the town. Application was recently made for sanction to borrow £5600 for works of sewerage and sewage disposal, but there was so much opposition to the site for the disposal works that the site proposed was not sanctioned. It is intended to treat the sewage by precipitation with ferrozone and filtration through polarite.

Wimbledon Urban Sanitary District.—Of 47 cases of diphtheria notified in this district during 1893 there were but 3 deaths, a remarkably low fatality rate. The bodies of the fatal cases were removed as soon as possible to the mortuary. Mr. Pocklington reports that in nearly all the houses in which diphtheria was notified the drainage was very defective. As regards scarlet fever it may be mentioned that of 166 cases treated at the fever hospital no deaths occurred, while of 128 treated at home 3 were fatal. In many cases the disease seems not to have been recognised until desquamation appeared, and there is no doubt that these mild cases are a source of great danger and present a very serious difficulty from an administrative point of view. Apparently there is a good prospect of a permanent isolation hospital being shortly erected for the use of the district, but the proposal to obtain a loan for its erection was referred back to the sanitary authority, after inquiry by the Local Government Board, owing to there being no mortuary, laundry or disinfecting provision. During the autumn of last year a large number of scarlet fever cases had to be accommodated in a hospital tent, and a corrugated iron hospital, together with a small administrative block, was erected for the isolation of small-pox. We heartily sympathise with Mr. Pocklington in his regrets that the delay in providing proper hospital accommodation should have necessitated these temporary measures, and we agree with him that these hastily constructed wards place a most unjustifiable responsibility and anxiety on those who are in charge of the patients. Under the heading of "cases admitted into the infectious diseases hospital" we find the alarming statement that "14 of the scarlet fever cases contracted small-pox in the hospital." Is this what the sanitary authority of Wimbledon consider isolation? Surely these unfortunate victims would have fared better at their own homes.

Thingoe Rural Sanitary District.—Scarlet fever of a

particularly mild type prevailed in this district during last year, and Dr. Charles Kilner records several cases where the patients were found in school desquamating, the parents having been quite ignorant of the nature of the complaint. It is difficult to see how occurrences such as these are to be prevented even where notification is in force, and the only measure likely to reduce them is to have all the school children frequently examined by a medical man. Dr. Kilner, in considering diphtheria, thinks that in several cases an impure water-supply was the probable cause; but we must say we are not familiar with any well-authenticated outbreak where water was proved to be the vehicle of infection. The Thingoe rural sanitary authority have just completed, under the provisions of Part III. of the Housing of the Working Classes Act, 1890, eight cottages at Ixworth at a cost of £1300. The cottages are in pairs, and each contains three bedrooms and has a quarter of an acre of garden attached to it. We should be much interested to hear from Dr. Kilner how these cottages answer, and we hope he will be able to give us an account of them from a financial aspect next year. As far as we remember, the Thingoe rural sanitary authority were the first authority to take action under Part III. of the above Act, and on the success of their experiment much depends.

Hartismere Rural Sanitary District.—One hundred and twenty cases of scarlet fever occurred in this district during the year, but not one death, and in 25 of the 51 houses involved the disease was confined to one case. Dr. Edgar Barnes does not, however, state how many susceptible persons there were in each of the houses in which only one case was recorded. All the above figures might easily have been taken to illustrate the supposed beneficial effects of any given drug or line of treatment, and they serve to show the fallacy of drawing deductions as regards treatment from any single outbreak or from too limited a number of cases. Dr. Barnes states that there has been great difficulty in obtaining notification from the heads of households, but the sanitary authority has determined that notification according to the Act shall be insisted upon, and several persons have been accordingly prosecuted. In advocating a fever hospital for the district, Dr. Barnes expresses the opinion that county councils should have power to provide isolation hospitals at suitable centres in the counties. These remarks were probably written before the Isolation Hospitals Act, 1893, came into force, as that Act conferred upon county councils the very powers suggested by Dr. Barnes.

Ashton-in-Makerfield Urban Sanitary District.—The infantile mortality in the district for 1893 was a very high one, being 200 per 1000 births; of a total number of 130 infantile deaths no less than 56 were of infants from 5 seconds to 1 month old. There were several small outbursts of small-pox in the district, and one of them apparently arose from some infected bedding which was stolen during the process of disinfection. As regards scarlet fever Mr. Nathan Hannah tells us that in one school he found no less than 11 children with signs of the disease upon them. Sixteen cases of puerperal fever with 10 deaths were notified during the year, and Mr. Hannah found that the majority of them were due to infection from one midwife, who was admonished to abstain from confinements for three months.

Barnsley Urban Sanitary District.—Dr. M. T. Sadler records, with regard to the 76 deaths from diarrhœa which occurred in 1893, that 63 of them took place between June 21st and Sept. 21st, during the whole of which time the temperature of the earth at a depth of four feet was at or above 56° F. In the year under review no less than 234 cases of enteric fever were notified in Barnsley, and the disease evinced an exceptional proclivity to spread by means of infection from person to person. As many as 61 of the cases were in eighteen houses, the number of cases per house varyirg from 2 to 6. Dr. Sadler does not consider this excessive incidence of enteric fever was connected either with water- or milk-supplies, and he is inclined to regard personal infection under unfavourable conditions as the main factor in spreading the disease. As he points out, matters were much complicated by the deprivation due to the coal strikes, and in many houses there was considerable overcrowding. However willing, Dr. Sadler remarks, the people might have been to adopt the necessary precautions, they had not and could not procure the supply of bedding and body linen needful to keep the atmosphere of their rooms free from infection. There are, no doubt, enormous difficulties in the way of nursing typhoid fever in the houses of the poor. The Kendray Fever Hospital is apparently not equal to the wants of the district which it nominally serves, and attempts have been made to obtain a loan for enlarging it. Hitherto, however, sanction for a loan has been refused by the Local Government Board owing to the fact that one block is used for the reception of small-pox. Dr. Sadler admits that it is unsafe to treat small-pox and other infectious diseases even in quite separate blocks—that is to say, if the general administration is in one building—unless, indeed, the fever patients "are protected by revaccination every time a case of small-pox is brought in;" he seems to think, however, that if the present small-pox block is fenced off and provided with a complete administrative department little risk will be run, but this proposal of course raises the whole question of the aerial convection of small-pox.

Torquay Urban Sanitary District.—Mr. Paul Karkeek tells us in his report that during last summer and autumn he visited a large number of yachts, trading vessels, and fishing craft coming from foreign ports, and he expresses a hope that during the coming summer the presence of cholera in some of our home ports may not render it necessary to supervise, in addition, the coasting craft. He seems to think, in fact, that to insist upon inspecting coasting vessels and to exercise no supervision over persons going by train is a task rather akin to straining at a gnat and swallowing a camel. We appreciate Mr. Karkeek's point, but we are, nevertheless, not quite able to agree with him. The whole principle of our cholera protective measures is, we take it, based upon the assumption that neither by quarantine nor by medical inspection can we guarantee the exclusion of cholera from this country. Our position, however, is, that by medical inspection we may considerably diminish the risk of cholera importation, and, further than that, we may by means of notifying addresses of passengers &c. aid inland sanitary authorities in controlling the disease if once introduced. There is, too, little doubt that the risk of infection being introduced by coasters is very considerable, more especially as some foreign vessels enter the coasting trade shortly after their arrival from foreign ports. There is also this important difference between a coasting vessel and a train—the time spent in a coasting vessel in passing from place to place is usually considerable, and ample time is thus afforded for the development of cholera amongst the crew, whereas the time spent in a train in this country is at most but a few hours. In dealing with a coasting vessel we are practically dealing with a house, and our precautions are aimed at preventing the introduction of an infected house from one district into another. Furthermore, cholera is especially likely to prevail among a seafaring population and those inhabiting the low-lying districts around many of our ports and harbours. The supervision of coasters is practicable, that of trains is impracticable. Mr. Karkeek's observations in regard to the conveyance of small-pox by letters will probably be of interest to our readers, and we therefore quote them in full. It would have added to the force of the narrative had the dates upon which the letters were received been given, but we can quite understand that there may have been a practical difficulty in the way of obtaining them:—"We have had no cases of small-pox for years, but it was by the greatest luck that we did not have a case last year. In the month of April I received notice from the medical officer of health of an important town on the Welsh coast that a young man had been admitted to the small-pox hospital who had only left Torquay two days previously. I went at once to the address and found it occupied by a family of several persons and three lodgers (all assistants in the same shop as the person in question), and all were in perfect health. After a few preliminary inquiries I stated the object of my mission, whereupon I soon learnt the origin of their friend's misfortune. It appears that the patient was engaged to be married to a nurse in a hospital in a large manufacturing town in Yorkshire, and where there had been many small-pox patients, on whom she had been attending, and she had been often writing to him after the manner of betrothed. His friends here had suggested to him that this correspondence was not unattended with risk; but he had replied that the letters were all disinfected before being posted &c. If they had been subjected to this treatment it must have been very inefficiently done, as the result doth testify. Two or three days after and we should have had the credit and expense of the case here. Strange to say, the last case of small-pox in the town—viz., in March, 1884—was imported here under almost precisely similar circumstances. *Qui custodiet ipsos custodes?*"

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6409 births and 3855 deaths were registered during the week ending March 17th. The annual rate of mortality in these towns, which had been 20·5 and 19·9 per 1000 in the preceding two weeks, further declined last week to 19·2. In London the rate was 19·3 per 1000 and almost corresponded with the mean rate in the thirty-two provincial towns. The lowest rates in these towns were 12·1 in Croydon and in Norwich, 13·6 in Brighton, 14·3 in Huddersfield, and 14·7 in Cardiff; the highest rates were 21·9 in Swansea, 22·9 in Gateshead, 24·3 in Burnley, 24·6 in Salford, and 25·6 in Liverpool. The 3855 deaths included 448 which were referred to the principal zymotic diseases, against 478 and 471 in the preceding two weeks; of these, 124 resulted from measles, 118 from whooping-cough, 71 from diphtheria, 47 from scarlet fever, 39 from "fever" (principally enteric), 34 from diarrhœa, and 15 from small-pox. These diseases caused the lowest death-rates in Brighton, Croydon, Norwich, and Hull, and the highest rates in Oldham, Wolverhampton, Birkenhead, West Ham, and Liverpool. The greatest mortality from measles occurred in West Ham, Leicester, Wolverhampton, and Birkenhead; from scarlet fever in Burnley; from whooping-cough in Swansea, Derby, Oldham, and Plymouth; and from "fever" in Liverpool. The 71 deaths from diphtheria included 52 in London, 3 in Manchester, and 2 each in West Ham, Birmingham, and Sheffield. Eight fatal cases of small-pox were registered in Birmingham, 3 in London, 2 in West Ham, 1 in Cardiff, and 1 in Oldham; but not one in any other of the thirty-three large towns. There were 87 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 17th inst., against 81, 84, and 87 at the end of the preceding three weeks; 20 new cases were admitted during the week, against 17 and 24 in the preceding two weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2107, against 2181, 2188, and 2153 on the preceding three Saturdays; 222 new cases were admitted during the week, against 239 and 212 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 413 and 434 in the preceding two weeks, declined to 373 last week and were 151 below the corrected average. The causes of 82, or 2·1 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Leicester, Oldham, Leeds, Newcastle-on-Tyne, and in ten other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Bristol, Liverpool, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·6 and 21·1 per 1000 in the preceding two weeks, declined again to 21·0 during the week ending March 17th, but was 1·8 per 1000 above the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 13·3 in Paisley and 15·4 in Perth to 22·5 in Greenock and 22·9 in Glasgow. The 600 deaths in these towns included 30 which were referred to whooping-cough, 8 to scarlet fever, 8 to diphtheria, 8 to "fever," 5 to diarrhœa, 3 to measles, and 3 to small-pox; in all, 65 deaths resulted from these principal zymotic diseases, against 70 and 78 in the preceding two weeks. These 65 deaths were equal to an annual rate of 2·3 per 1000, which was slightly above the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 34 and 41 in the preceding two weeks, declined again to 30 last week, of which 18 occurred in Glasgow and 4 in Dundee. The 8 deaths referred to scarlet fever corresponded with the number in the preceding week and included 4 in Glasgow and 2 in Aberdeen. The fatal cases of diphtheria, which had declined from 12 to 9 in the preceding three weeks, further fell to 8 last week, of which 6 occurred in Glasgow and 2 in Edinburgh. The deaths referred to different forms of "fever," which had increased from 4 to 7 in the preceding three weeks, further rose to 8 last week and included 7 in Glasgow. Of the 3 fatal cases of small-pox, 2 occurred in Glasgow and 1 in Edinburgh. The deaths referred to diseases of the respiratory organs in these towns, which had been 118 and 113 in the preceding two weeks, further declined to 106 last week and were 30 below the number in the corresponding period of last year. The causes of 39, or nearly 7 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the preceding three weeks from 29·2 to 30·4 per 1000, declined again to 25·8 during the week ending March 17th. During the past eleven weeks of the current quarter the death-rate in the city has averaged 31·7 per 1000, against 21·3 in London and 18·8 in Edinburgh. The 173 deaths in Dublin during the week under notice showed a decline of 31 from the number in the previous week and included 9 which were referred to the principal zymotic diseases, against 14 and 13 in the preceding two weeks; of these 9 deaths, 5 resulted from whooping-cough, 2 from "fever," 1 from measles, and 1 from diarrhœa, but not one from small-pox, scarlet fever, or diphtheria. These 9 deaths were equal to an annual rate of 1·3 per 1000, the zymotic death-rate during the same period being 2·7 in London and 1·7 in Edinburgh. The fatal cases of whooping-cough, which had been 7 and 6 in the preceding two weeks, further fell to 5 last week. The deaths referred to different forms of "fever," which had declined from 5 to 3 in the preceding two weeks, further fell to 2 last week. The 173 deaths registered in Dublin last week included 32 of infants under one year of age and 44 of persons aged upwards of sixty years; the deaths of infants showed a slight increase, while those of elderly persons were considerably below those recorded in recent weeks. Four inquest cases and 3 deaths from violence were registered; and 56, or nearly a third, of the deaths occurred in public institutions. The causes of 16, or more than 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-CAPTAIN G. BENT, A.M.S., having reported his arrival for duty at Netley on the 12th inst., is taken on the strength from that date accordingly.

INDIA AND THE INDIAN MEDICAL SERVICE.

The following appointments are announced: Surgeon-Captain J. S. S. Lumsden, to the Civil Medical Charge of Almora, in addition to his military duties. Surgeon-Major Parker, to the Medical Charge of the Station Hospital, Mount Abu. Surgeon-Major Macneece, to the Medical Charge of the Station Hospital, Ahmedabad. Brigade-Surgeon-Lieutenant-Colonel A. Cameron, M.D., to act temporarily as Inspector-General of Civil Hospitals, North-West Provinces and Oudh. Surgeon-Major G. S. Robertson, C.S.I., I.M.S. (Bengal), Agency Surgeon at Gilgit (on special duty in England), substantively to be British Agent at Gilgit. Surgeon-Captain E. H. Wright, to act as District Surgeon and Superintendent of the Gaol, Nellor. The services of Surgeon-Major J. Lewtas, Civil Surgeon of Chittagong, are placed temporarily at the disposal of the Government of India in the Home Department. Surgeon-Major R. D. Murray, Civil Surgeon of Gaya, is appointed to act as Civil Surgeon of Chittagong until further orders. Surgeon-Captain E. R. W. C. Carroll, I.M.S. (Bengal), is appointed to officiate as Civil Surgeon of the Kamrup District. Surgeon-Major Dobson, Civil Surgeon of Shillong, will officiate as Protector of Emigrants, Calcutta, in April. Surgeon Stalkartt, A.M.S., has leave to England for six months. Surgeon-Captain J. R. Adie has been granted an extension of furlough for six months.

YEOMANRY CAVALRY.

Royal Wiltshire (Prince of Wales's Own Royal Regiment): Ernest Kingscote, M.B., to be extra Surgeon-Lieutenant, under the provisions of paragraph 33A, Yeomanry Regulations, 1889.

VOLUNTEER CORPS.

Rifle: 2nd Volunteer Battalion, the Royal Fusiliers (City of London Regiment): Surgeon-Lieutenant G. T. Catteli, M.D, resigns his commission.—3rd Volunteer Battalion, the

Bedfordshire Regiment: Surgeon-Captain G. W. Murphy, M.B, resigns his commission; also is permitted to retain his rank and to continue to wear the uniform of the Battalion on his retirement.—2nd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): John Barr Stevens, M.B, to be Surgeon-Lieutenant. *Volunteer Infantry Brigades:* Home Counties Brigade: Surgeon-Lieutenant-Colonel H. F. Holland, M.D., 3rd Volunteer Battalion, the Bedfordshire Regiment, to be Brigade-Surgeon-Lieutenant-Colonel.

ARMY MEDICAL SCHOOL, NETLEY.

The sixty-eighth session of the Army Medical School, Netley, will commence on April 2nd. Ten surgeons on probation for the Army Medical Staff, and fourteen for the Indian Medical Service will attend the course of instruction. The first of the systematic lectures will be delivered by Brigade-Surgeon-Lieutenant-Colonel W. F. Stevenson, Professor of Military Surgery, on Wednesday, April 4th, at 12 30 o'clock. The following is a list of the names of the surgeons on probation in order of merit who will attend the school:—Army Medical Staff: P. Evans, J. P. Silver, J. M. Buist, H. W. Vaughan-Williams, J. Walker, A. E. Milner, S. W. Sweetman, F. Dove, C. K. Morgan, and G. St. C. Thom. Indian Medical Service: G. Ramsay, D. W. Sutherland, W. Selby, H. J. K Bamfield, W. D. Hayward, A. H. Moorhead, T. A. Granger, H. M. Moore, A. W. F. Russell, D. C. Johnston, C. R. Pearce, J. W. Grant, V. B. Bennett, and W. E. Scott-Moncrieff.

SANITATION IN INDIAN VILLAGES.

It seems that sanitation does not make much progress in India outside the large towns, where it has in reality been forced upon the municipal commissioners. There is a great deal of talk about village sanitation and local self-government, but the people are not only extremely poor, ignorant, and prejudiced, but they have no real belief in any methods and systems of modern hygiene. Whatever improvements and changes have to be made, they must be introduced from without, for the rural population of India has no initiative as regards even the most primitive requirements of sanitation, and their education in these respects is of very slow growth.

THE LEE-METFORD RIFLE.

Mr. Campbell-Bannerman, in his speech introducing the Army Estimates, alluded, among other things, to the Lee-Metford rifle, of which, either in the hands of the troops or in the stores, there are, he said, sufficient for all the regulars and militia. As a proof of the penetration of this rifle, the War Minister mentioned that experiments had shown that there was no safety behind a nine-inch brick wall up to a distance of 500 yards. It seems clear that the effect of these modern rifles in war will be to increase greatly the number of wounded, and it will become a grave question how to provide a corresponding and adequate amount of medical aid and succour under the conditions of modern war.

Brigade-Surgeon-Lieutenant-Colonel J. Lane Notter, M.D., Professor of Hygiene in the Army Medical School, has left Netley to attend the International Medical Congress as a representative of the Medical Staff of the Army.

The transport *Bothnia* sailed from Bombay on the 4th inst. with forty-four men, one woman, and two children for Netley.

Correspondence.

"Audi alteram partem."

MEDICAL DEGREES IN THE NEW UNIVERSITY.

To the Editors of THE LANCET.

SIRS,—Should not attention be given without delay to the apparently complete absence of consideration for the interests of those who now possess a diploma from one or both of the London Colleges, and who may wish to add to it a degree of the new University? Mr. Craven's motion at the meeting of Fellows of the Royal College of Surgeons yesterday raised this question, but in such a narrow way (by considering only the interests of gentlemen over sixty-five years of age who were able and willing to pay 50 guineas) that it obtained no seconder. It was therefore impossible to widen it by amendment. I see no good and sufficient reason why any gentleman who now possesses a London medical and surgical diploma should not be granted a degree of the new University after passing a *bonâ fide*—severe if you like, but purely practical—examination, and after paying reasonable fees.

I am, Sirs, yours obediently,

London, March 20th, 1894. C. B. KEETLEY.

"AERIAL CONVECTION OF SMALL-POX FROM HOSPITALS."

To the Editors of THE LANCET.

SIRS,—I have read carefully Dr. Sisley's second letter, and having re-read also my reply to his first, it really seems to me that no further answer on my part is necessary. I may, however, refer to what has already appeared. Dr Sisley complained that my paper did not contain the facts as to the relationship of rising epidemics to hospital influence. In reply I pointed out that I had specifically stated to the society, to which my paper was addressed, that I purposely refrained from recapitulating the evidence, assuming that the members were well acquainted with the Local Government Board reports. It was on this hypothesis that my paper was prepared and, having called the attention of Dr. Sisley (who, by the way, is a member of the society) to this fact, and having further referred him to the reports in question, I am surprised that on this point he should now write that "medical speculations are to me (Dr. Sisley) of interest in so far only as they are supported by facts, and the facts are not given by Dr. McVail." If Dr. Sisley is not acquainted with the facts, and if he deliberately chooses to refrain from reading the reports containing them that is his own affair. It is no part of my duty to depart from the conditions which I laid down to those who cared to listen to or read my paper. In further replying to his questions, I said that the agency which I had classed as 1 (o) would have been better placed by itself under a separate heading instead of under 1, and I ought to have thanked him for calling my attention to the point. Ignoring the corrections—but, no doubt, unintentionally—Dr. Sisley tags the two together as before and repeats his question. I also indicated that that which, with reference to a whole epidemic, may be in duration only a minor wave, may yet, as regards a particular locality at a particular time, extend infection in a manner analogous to a flood tide or spring tide. Since, however, Dr. Sisley looks on the statement that rhythm is a law of nature merely as a "curious assertion," and since he thinks that in old times the expression "epidemic waves" was only a cloak for ignorance, it does not astonish me that he gains no light from my reply. He suggests that possibly the difficulty may be due to his own obtuseness. That is rather an awkward question for me to discuss, but I am glad to say that I do not think the explanation is to be found there, but rather in the fact that our methods of thought do not seem to have many points in common, and that sometimes we do not attach the same meaning to ordinary language. For example, Dr. Sisley believes that the difference between "the beginning of an epidemic" and "a rising epidemic" is only verbal, while to me it is very real and actual. All this being so, it is very satisfactory to know that Dr. Sisley from his point of view tends to arrive at an opinion not dissimilar from mine as to the main thesis of my paper.

I am, Sirs, yours truly,

George-square, Glasgow, March 19th, 1894. JOHN C. MCVAIL.

*** This correspondence must now cease.—ED. L.

A CASE OF ACUTE PEMPHIGUS IN A CHILD; GANGRENE OF HANDS AND CALVES; DEATH.

To the Editors of THE LANCET.

SIRS,—I have read with interest the cases recently published in THE LANCET by Drs. Penrose[1] and Webber.[2] As there seems to be a desire for further observations upon the condition expressed by them, I forward you notes of a case which I attended as far back as February, 1878, which both interested and puzzled me very much at the time. A child aged nine months was brought to my surgery in a collapsed condition, evidently in great pain, and presenting the following

[1] THE LANCET, Feb. 3rd, 1894. [2] THE LANCET, Feb. 24th, 1894.

condition. There was a large semicircular, dark, almost coppery-coloured patch, the epidermis being denuded, about three inches in diameter, extending from the angle of the mouth over the right cheek almost to the ear of the same side; it was dry, but had no scab upon it. There was a circular patch the size of a half-crown covered with a yellow eczematous-looking scab under the left eye, involving the lower eyelid. Both hands from the wrists downwards were of erythematous redness and completely denuded of epidermis, which had separated and hung downwards in a glove from the second phalanges of the fingers. There were also red, dry patches denuded of epidermis (circular, or some modification thereof) on each arm at the bend of the elbow. The general appearance of the hands and patches was as if the child had been severely scalded, but the denuded epidermis was quite white, and the serum clear like water. The history given me was that the child, said to have been previously healthy—and it was a fine, well-nourished one—had been brought from Stafford by train on Feb. 2nd, nine days previously, to a solitary house occupied by a shepherd and his family in a mountainous part of Wales. The mother had sent it to be nursed, and some tinned milk was sent with it and given for two days, when the child refused it, and fresh cow's milk was substituted. From this time the child seemed to be unwell and five days previously to being seen (i.e., on Feb. 6th) vomited and had a fit. After this the first patch appeared on the inside (bend) of the left elbow, being quickly succeeded by those on the face. The patches, which were in the early stage of erythematous redness, circular, or some modification thereof, in form, and not raised above the level of the surrounding skin, nor with any hardness of the base on the surrounding parts, appeared thus as I saw them. First, a minute area of skin the size of a pin's head became reddened and spread circularly and rapidly; almost simultaneously a blister appeared in its centre, spread over and to the extent of the red patch, and then burst, discharging a clear, water-like serum, the epidermis remaining wrinkled and folded. (In course of time, which is variable, the patch becomes of a deeper red hue, and the epidermis is denuded altogether.) Excepting in the one under the left eye, there was no appearance of a scab in any other of the patches. The spreading of a patch occurs so rapidly that in the course of three or four hours' time some of them will cover and denude a large extent of skin—from one to four inches in diameter. On Feb. 13th the child was still collapsed and in much the same condition as on Feb. 11th as regarded the face, hands, and arms, but the hands were of a darker red colour. There was a fresh circular patch the size of a halfpenny on the throat, over the thyroid. The ears were entirely denuded of epidermis, both in front and behind. When previously seen the legs were clear, but now both entire calves were denuded and gangrenous (dry and black) without much fetor. The first patch, I was informed, had appeared on these, but on the afternoon previously, Feb. 12th, the feet were clear, but there were some patches on the thighs in different stages. I was shown a patch on the inside of the right thigh, where the preliminary red area had appeared two hours previously. It was now the size of a penny, with the wrinkled epidermis lying folded upon it. The child was fearfully depressed, the slightest movement seeming to cause intense suffering; the teeth and mouth were dry and typhoid in appearance. The tongue had a thin white coating, as had the greater part of the cavity of the mouth. There was neither diarrhœa nor vomiting, but there was general congestion of both lungs, with accelerated breathing and feeble moaning, the voice nearly gone, the face pale, the eyes sunk, the skin cold, and the pulse but faintly perceptible. On Feb. 14th the patient died at 5 A.M. Both hands became gangrenous from the wrists downwards on the previous evening. The patient had neither convulsions, diarrhœa, nor vomiting before death.

Upon inquiry I found that there had been a case of measles in the house a fortnight previously to the child's having come there. As I afterwards had four cases at the town dispensary in which the acute pemphigus was associated with aberrant, almost suppressed, measles, I judged this case to be of the same nature. (It will be seen by this that my opinion at the time coincided with Dr. Webber's that "it is not unusual in some of the exanthemata and may suggest the possibility of an alliance in nature with these diseases.") At first, however, I imagined that the condition might have been contracted from a disease called the "strike" (a kind of embolic or thrombotic gangrene, rapidly fatal, which occurs in young cattle and flocks), which was at the time very prevalent amongst, and fatal to, the flocks herded by the shepherd in whose house the illness occurred and who had flayed many of the sheep; this idea was, however, dispelled upon subsequently seeing the other cases at the dispensary. I have not seen a similar case since.

I am, Sirs, yours truly,

E. ROBINSON, M.D. Edin.

Frensham, Farnham, March 5th, 1894.

LOCAL GOVERNMENT ACT, 1894: ARE DISTRICT MEDICAL OFFICERS QUALIFIED TO BE ELECTED MEMBERS OF A PARISH COUNCIL?

To the Editors of THE LANCET.

SIRS,—There must be many medical men living in rural parishes and holding union appointments to whom this question is of some importance. As everyone has not seen the Act, I will quote the parts of the clause relating to the matter. "46.—1. A person shall be disqualified for being elected or being a member or chairman of a council of a parish or of a district other than a borough or of a board of guardians if he—(*d*) holds any paid office under the parish council or district council or board of guardians as the case may be; or (*e*) is concerned in any bargain or contract entered into with the council or board or participates in the profit of any such bargain or contract or of any work done under the authority of the council or board. 3. Where a person who is a parish councillor or is a candidate for election as a parish councillor is concerned in any such bargain or contract or participates in any such profit as would disqualify him from being a parish councillor, the disqualification may be removed by the county council if they are of opinion that such removal will be beneficial to the parish."

The majority, I have no doubt, would on reading this come to the conclusion that paid officers of a board of guardians could not become candidates for a parish council unless the county council saw fit to remove the disqualification. In both conclusions I think the majority would be wrong, for a county council has only power to remove a disqualification under (*e*) and not under (*d*). I do not, however, believe that they are disqualified, and to make this plain I will condense the clause thus. A person may not be a parish councillor, a district councillor, or a guardian if he holds any paid office under the parish council, or district council, or board of guardians, as the case may be. These last five words, "as the case may be," can only mean respectively, therefore, that unless a person was paid by the parish council he would not be disqualified.

I am, Sirs, yours truly,

Gillingham, Dorset, March 17th. T. WOODS.

ABDOMINAL SECTION FOR RUPTURED GASTRIC ULCER.

To the Editors of THE LANCET.

SIRS,—In your account of the discussion at the Royal Medical and Chirurgical Society on Mr. Morse's case certain remarks of mine are so placed as to convey a meaning different from what my language did convey, and from my views. In speaking of flushing out the peritoneal cavity with warm distilled water I am represented as saying that the "water, if warm, served to abolish the symptoms of collapse; the best temperature was 112° F.," the fact being that I detailed one case of very marked and sudden collapse, in which I revived the patient by the use of water at that temperature; it was used rapidly and only for a few seconds. I by no means propose or could give the sanction of my name to using such very warm water under usual circumstances or in slighter degrees of collapse, and still less to its use in the ordinary flushing out of the peritoneum (which may be rather prolonged) necessary after laparotomy for some forms of disease.

I am, Sirs, yours truly,

Wimpole-street, March 19th, 1894. RICHARD BARWELL.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

City Coroner's Inquests in 1893.

THE report of the Liverpool head constable for the year 1893 gives, among other interesting details, a return of the

inquests held during the year by the city coroner. Formerly this was made to comprise the year from Sept. 30th to Sept. 29th following; now it is from Jan. 1st to Dec. 31st. There were in all 957 inquests, being on the bodies of 563 males and 394 females. In addition to these, 605 other cases of death were reported to the coroner by the police and others, making a total of 1562 cases of death investigated by the coroner during the year. In these 605 cases the coroner held merely informal inquiries, deciding that inquests were unnecessary. This return gives for the first time the number of post-mortem examinations, which it appears was 112. Of the total inquests, 5 ended in verdicts of wilful murder and 7 of manslaughter, thus confirming what has so often been stated in THE LANCET—that the cases involving any legal charges form but a very small percentage of inquests. Another fact very interesting in a medical point of view is that in so many as 124 cases the finding of the jury was "Death from natural causes." No fewer than 171 infants were found to have been "suffocated whilst in bed with parents or others." The ominous verdict "Excessive drinking" was found in the large number of 112 males and 84 females.

The Assizes: Trials for Murder.

The assizes now being held before Justices Day and Charles will long be memorable for the gravity of many of the cases in the calendar and for cases of medico-legal interest in both courts. The first case of murder tried by Mr. Justice Day was that of a married woman for the murder of her husband. The evidence of Mr. J. S. Kellet Smith, Demonstrator of Anatomy at University College, Liverpool, who was called to see the body when the murder was reported to the police, showed that death had taken place at least twelve hours previously. The deceased was a well-built, well-nourished man between forty and fifty years. Among numerous wounds the most serious were a cut on the left forearm, two cuts on the side of the face, one on the forehead, and one across the bridge of the nose. Death resulted from shock and hæmorrhage. The prisoner had threatened to "fly paper" the deceased and had predicted that he would never leave his room till he left it in his coffin. Jealousy would appear to have been the motive for the murder.

Drink and Murder.

The next case was that of a Manchester labourer who was charged with the murder of a woman with whom he had lived as his wife. Both were free drinkers and were accustomed to get drunk at the end of every week. Both were drunk on the 3rd inst., and on the morning of the 4th the prisoner called in the neighbours, who found the woman dead. Mr. Heslop, the police surgeon, found a wound at the corner of the right eye, six punctured wounds on the left side of the head extending to the bone, one behind the left ear of equal depth, and six other wounds on the same side, four severe bruises on the front of the chest, one over the sixth and seventh ribs, two bruises on the left upper arm, four on the left leg and thigh, one on the right knee, and three on the right arm. The lip was cut, there were three punctured wounds at the left corner of the mouth, and there was much bruising of the neck. The cause of death was hæmorrhage and shock.

Death of a Police-constable from alleged Violence; no Lesion apparent.

The third case was that of three men charged with the murder of a police-constable named Gordon at St. Helens, on Nov. 12th, 1893. At 11.15 P.M. that day the prisoners were engaged in robbing a hencote on the premises of the Navigation Boiler Works when they were surprised by the deceased and another constable, whom they at once attacked with much violence. Mr. McNicoll, police surgeon, saw Gordon soon afterwards. He was a stalwart young fellow, rather stout for his age (thirty). He looked pale and his voice was rather weak. There was an incised wound just over the right side of the forehead one inch and a half long, penetrating to the bone but not injuring it. On the left side just above the ear there was a contused wound about an inch long but no injury to the bone. The deceased expressed a wish to return to duty after his wounds had been dressed and he had drunk some whisky which Mr. McNicoll gave him, but he was induced to go home accompanied by one of his brother officers. The evidence of a witness who slept in the same room was that the deceased came into the room at 3 A.M. on the 13th, struck a match, undressed, and went to bed. On the witness noticing that his head was bandaged and asking him if he wanted any assistance, the deceased said, "Don't bother yourself; go to sleep." The witness woke up at 7 A.M., and on going to look how the deceased was he found him lying dead. Mr. McNicoll came promptly, and found that death had taken place not long before, the body being still warm. A post-mortem examination was made by him and Mr. Knowles; no natural disease was found, and no lesion as the result of violence could be discovered. A second examination was made by a local surgeon and a skilled expert, but nothing to account for death could be found. Messrs. McNicoll and Knowles attributed death to shock from the violence he had received. The prisoners' counsel urged that as no dangerous weapon had been used it was not murder, but Mr. Justice Day ruled that any violence which resulted fatally to a policeman while in the discharge of his duty was murder. His lordship lamented that the police did not use their staves earlier, which might have saved the deceased's life. All three prisoners were found guilty, and there are now five prisoners in H.M.'s prison at Walton under sentence of death, four of them having been recommended to mercy.

The Notification of Typhus Fever.

The notification of infectious diseases generally and of typhus fever in particular has been very much in evidence in this city lately, and has given rise to much feeling in professional circles. It is a little remarkable that so far back as 1796 the late Dr. Currie, then a physician of some eminence in Liverpool, urged the importance of removing fever patients (whose mortality at that time was frightful) from the foul dens in which the pestilence found its victims, and where it acquired its greatest virulence, into the pure air and cleanly wards of a hospital, that the sick themselves would be more likely to recover and that the infection would be far less likely to spread. In 1801 the first fever hospital was established, the result of Dr. Currie's exertions aided by his medical brethren. Unfortunately, although nearly a century has passed, these dwellings, which may be correctly described as "foul dens," still exist in Liverpool, and the importance of prompt removal needs no argument. Undoubtedly the diagnosis of fever under such unfavourable circumstances presents much difficulty. Still, it can hardly be contended that this latter is insuperable. The great characteristic of medical education in these days is that it is so practical. It will become still more so if, as has been suggested, it is made to include attendance at an infectious diseases hospital for some months. The importance of being able promptly to diagnose fevers, even under the most unfavourable circumstances, is obvious.

March 19th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Whitley Convalescent Home.

THE annual meeting of the Whitley Convalescent Home was held last week in the library of the Royal Infirmary, Newcastle, the mayor presiding. The medical report showed that over 1500 patients had been received from Northumberland, Durham, Yorkshire, Cumberland, &c., and that, taken altogether, 1487 had received benefit, or over 95 per cent. The financial statement was satisfactory except as regards legacies, which had fallen off to the amount of nearly £900. This the chairman regretted the more, as the number of patients admitted exceeded that of any previous year. There was no falling off, however, in the usual subscriptions.

The Meteorology of Newcastle.

I was prepared to hear that the Newcastle and Northumberland district generally was the driest in England; but I was startled to know that in the month of January last it was two degrees colder (six degrees below zero) than in Aberdeen, and three degrees colder than in Berwick. I am prepared to hear anything, however, about force of wind. For instance, a hearse whilst conveying a body to one of our cemeteries was blown over last week when nearing the gates, although there were two men sitting on the box. Truly says Dr. Wm. Murray, speaking of this narrow neck of land between England and Scotland, that it "is the playground of the opposing forces, where, to speak figuratively, a game of battledore and shuttlecock is played the year round. The west winds, warmed by the Gulf stream, and the north-east winds are the battledores, and we, the inhabitants, are, as it were, the shuttlecocks, tossed to and fro with every blast that blows. The game is played thus during the autumn and early

winter, and, say, up to Feb. 20th the west winds get the upper hand, and during the spring up to midsummer and later the east wind wins the game."

Floating Hospitals.

It appears from the last report of the Tees sanitary authority that a floating hospital is a very expensive requisite. It was estimated that before it was completed it would cost £10,000. The original estimate was £4,500. Estimates, it appears, are only approximate when applied to hospitals afloat. The authority hopes to get something from the inland towns on the grounds of protecting them from infectious diseases, but his point will be disputed.

Sad Death of a Carlisle Naturalist.

Mr. Tom Duckworth, a well-known naturalist, met with a sad death at Carlisle last week. He was engaged as machinist by the corporation of Carlisle at the Carlisle Free Library and Museum to look after the gas engines which supply the motive power to the electric light at the institution, and while cleaning a pulley his arm became caught between the belt and the wheel. His arm was fractured in two places, and he was thrown upon the floor with so much violence that his head was severely injured. On his removal to the infirmary it was found that his case was hopeless, and he died after a few hours. His knowledge of local flora and fauna of the district was both extensive and accurate, and he had the gift of being able to treat his subjects in an interesting and popular way.

Handsome Gifts to Border Charities.

The manager of the Cumberland Union Bank has received £400 from a lady who wishes to be anonymous, for distribution as follows: Cumberland Infirmary, £200; Carlisle Dispensary, £100; Cumberland and Westmorland Convalescent Institution, £50; and the Border Counties Home for Incurables, £50.

Newcastle-on-Tyne, March 21st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Insanitary Condition of Ardara.

A LOCAL GOVERNMENT BOARD investigation was recently held respecting the alleged failure of the Glenties Board of Guardians to perform their duty as the sanitary authority, and as a result of their neglect an epidemic of typhoid fever had occurred in the village of Ardara, due to the impure water-supply. The inquiry was undertaken in consequence of the reluctance of the guardians to remedy the existing defects in the water-supply of the village. Evidence was given to the effect that the public water-supply consisted of three pumps, two of which were absolutely unfit for use for any purpose. The wells from which the residents had been taking water were stated to be in the most dreadful state, and the place selected for the main pump was within a few feet of a foul sewer and near a graveyard, so that the water when standing for a few hours had a greasy scum upon it. In a case of manifest neglect like this the Local Government Board should take steps without delay to ensure to the inhabitants a supply of pure water.

Cork Fever Hospital.

The annual meeting was held last week, being presided over by the Lord Bishop of Cork. The gradual decrease in infectious diseases during the past ten years shows the striking improvement in the general health of the city. This improvement is largely due to the energy and zeal of the public health committee of the corporation in carrying out the provisions of the Public Health Act, especially the clause now in force for the past two years—namely, the Notification of Infectious Diseases Act, under which the sanitary authority is at once notified of a case of infectious disease occurring in a place, so that the patient can be removed to hospital without delay and the house disinfected immediately, thus in a great measure stamping out the disease. Typhoid fever showed a slight decrease, but better things cannot be expected so long as there exists an unfiltered water-supply liable to contamination at its source and along the river banks and a faulty, though somewhat improved, drainage. Dr. Murphy has been elected resident physician to the hospital, in the place of the late Dr. Francis Tuohy. At the close of the year there was a balance against the hospital amounting to £713 6*s.* 8*d.*

Secretaryship of the Council of the Royal College of Surgeons in Ireland.

Dr. Jacob, the efficient secretary to the council, has resigned after ten years' arduous service, and his successor will be appointed early in April.

Royal College of Surgeons in Ireland.

A committee of the Council of the College on Monday last met a deputation of the medical students with reference to their memorial recently forwarded to the Council. The secretary having read the memorial, the President (Mr. Hamilton) said that the students had adopted a very proper course in memorialising the Council on subjects to which they wished to call the attention of that body. Mr. T. Stoker, Vice-president, thought that the grievance about being asked to take out a fresh course of lectures on subjects in which they had been rejected was a sentimental one. It had been enforced in very few cases in the past, and he failed to see why it should be objected to, especially as it would only be applied in practical courses. The deputation pointed out that notices had lately been posted up in the College calling attention to this rule and notifying that it could be enforced at the option of the examiners. As some of these examiners were also lecturers, they were, by compelling students to attend a second course of lectures, putting money into their own pockets. Mr. Carte said he considered that the students were justified in objecting to the rule. Already the pockets of their parents were deeply dipped into, and further calls were unjustifiable. After further discussion the President said that the rule would only be enforced as it was in the past—that is, in cases where the candidate showed gross ignorance; as regarded the reduction in the examination fees, that was a matter that must be discussed by the Conjoint Board—its advisability was acknowledged, but the present committee could give no answer on that point. Sir George Porter asked what were the fees charged by the other examining bodies, and the secretary said that London charged £32, Edinburgh £26, and Dublin £42. Mr. Myles said that the students were not justified in asking for a reduction; they entered the College knowing what the fees were. Mr. Swanzy believed that the students were justified in asking for a reduction of the fee for re-examination; and Sir Charles Cameron said that the charge should be only just enough to cover the cost of the examination to the College. The President said that this matter would also be considered by the Council, but he could give no definite answer as to what reduction would be given or when it would come into force. The luncheon-room asked for would be given. The deputation then withdrew. A large meeting of students was afterwards held to receive the report of the deputation, but as they could give no definite reply from the Council respecting the reduction of fees the following declaration was signed by the students: "We hereby bind ourselves to take our summer courses of lectures at Trinity College or the Catholic School of Medicine pending the reply of the Council to our memorial." Should the Council be so foolish as to refuse what the students require it will be a very serious matter for the Schools of Surgery (Royal College of Surgeons), for once students leave a school it is most unlikely that they will return.

Queen's College, Belfast.

On Thursday, March 15th, Sir David Barbour, K.C.S.I., a distinguished Ulsterman and graduate of Queen's College, was entertained at dinner in the examination-hall of the institution by a most influential and representative company of college professors, graduates, and city merchants. The President occupied the chair and in proposing the toast of "Our Distinguished Guest" referred to the career of Sir David Barbour, who on leaving Queen's College entered the Civil Service in 1863 and, rising rapidly, became in 1887 Secretary to the Government of India in the Finance and Commerce Department. He was made a C.S.I., and subsequently a K.C.S.I., the highest official dignity to which a member of the Indian Civil Service can aspire. Sir David Barbour, in replying to the toast, spoke in very warm terms of the very great honour that had been paid him and subsequently proposed "The Queen's College," to which the President replied. The banquet was in every respect a great success. The medical winter session will end on April 19th, and the Royal University examinations will take place in May.

The Ulster Eye, Ear, and Throat Hospital.

At the annual meeting held on March 12th it was stated

that during the past year there had been 1644 patients, of whom 151 were intern. Mr. John Fagan has been appointed consulting surgeon in place of the late Dr. James Moore, and Dr. Killen, who has been anæsthetist at the hospital for about three years, and who has assisted Dr. McKeown in the work of the institution, has been appointed assistant surgeon. Financially the condition of affairs is good, the total receipts for the year being £609 14*s.* 5*d.* and the expenditure £622 6*s* 6*d.*

March 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Typhoid Fever in Paris.

IN last week's correspondence I informed the readers of THE LANCET that on the evening of the 3rd inst. there were under treatment in the Paris hospitals 234 male and 175 female patients suffering from typhoid fever. On the evening of March 10th the corresponding figures were 283 and 231, or an increase of 105. The deaths registered during the week ending March 10th were 70, instead of 52 occurring during the preceding week. Nevertheless, I may say that the epidemic is diminishing in activity, for the admissions into the hospitals have fallen from 291 to 162. Of the fatal cases 9 were amongst soldiers, and 37, or more than half the deaths, amongst civilians took place in hospital. Ordinarily, only a quarter of the deaths occur in hospital, and a departure from this rule proves that the disease in the present epidemic attacks the poor in much larger proportion than the well-to-do. The sixteenth (Passy) and the richer districts of the seventeenth (Batignolles-Monceau) arrondissements remain free from the disease, as do also the populous arrondissements, the nineteenth (Buttes Chaumont) and the twentieth (Belleville — Père Lachaise), which latter district enjoys the privilege of having had, for the last thirty years, less typhoid fever than any other part of Paris. Meanwhile, the profession has been active in seeking the cause of this sudden and totally unexpected invasion.[1] Dr. Bucquoy states that MM. Lorne and Moreau, practising at Sens, have written to inform him that typhoid fever, generally rare in that town, had made its appearance there since Feb. 10th. Now the Vanne water, with which a large part of Paris is supplied, comes from the neighbourhood of Sens, which town derives also its water-supply from the same source and through the same pipes. But here we have yet another theory put forward. Dr. Chantemesse of Paris informs us that the Dhuys water—also supplied to certain districts of the capital—was replaced from Feb. 10th to the 24th of the same month by water derived from the Marne, the aqueduct conveying the Dhuys water being, during that interval, under repair. Now, in a communication made to the Académie de Médecine in 1887, Dr. Chantemesse and M. Widal clearly demonstrated the relation existing between typhoid fever outbreaks in Paris and the substitution of Seine for spring water. They proved that such a substitution was invariably followed after an incubatory interval of two or three weeks by a considerable increase of admissions of typhoid fever cases into the hospitals. A striking proof of this assertion was furnished in October, 1889, when, the aqueduct of the Vanne having burst, Seine water was laid on for a fortnight throughout Paris. Dr. Chantemesse prophesied that a short but severe typhoid fever epidemic would result and his previsions proved correct. Replying to the objection that this justification of his theory would necessarily imply the limitation of the outbreak to the quarters habitually supplied with Dhuys water, Dr. Chantemesse says that one never knows whence the water-supply of a particular house is derived. He has frequently examined the Chamberland filter in use in a house supposed to be supplied from Vanne water. Sometimes this apparatus will work for a long period without becoming obstructed; then suddenly it becomes blocked by a thick layer of dirty mud, proving, to his mind, that another kind of water has been, without notice, substituted. Should Dr. Chantemesse's explanation be correct we may expect soon to witness a marked subsidence of the epidemic. Dr. Chantemesse reminds us that formerly when Seine water was regularly drunk, a slow process of inoculation preserved a certain proportion of the Paris population from the disease, immigrants being principally attacked. The abundant supply of pure drinking-water now at the disposal of the town will have the effect of doing away with this inoculating process, and the substitution of contaminated water will in future cause a larger number of victims.

[1] Académie de Médecine, March 13th.

Anomalies in the Genital Organs of Idiots and Imbeciles.

Dr. Jules Voisin,[2] in giving the results of the examination of the sexual organs of 150 female idiots and imbeciles at the Salpêtrière, reminds us of the conclusions arrived at by Dr. Bourneville and Dr. Sollier with regard to similar patients of the male sex. In them puberty is considerably retarded, and hermaphrodites, cryptorchids, monorchids, and cases of hypospadias are frequently met with amongst them. In females, on the contrary, Dr. Voisin remarked that the period of puberty was not retarded. In 75 per cent. there were, however, certain anomalies found involving principally the preputial fold of the clitoris, the labia minora, and the hymen. The prepuce is greatly developed and presents numerous folds. The labia minora are frequently very voluminous and apron or flag-shaped. They are often provided with supplementary folds, which gives them the appearance of being double, principally on one side—that on which self-abuse has been practised. On that side also pigmentation is more marked. The hymen is frequently labiated, and prevents more or less numerous folds, recalling, on superficial examination, vegetations. Finally, a large number of these degenerated beings offer unmistakable signs of defloration, due to masturbation. This fact is of great medico-legal interest, for how may this onanismal defloration be distinguished from that resulting from rape? M. Voisin believes that the unilateral rupture of the hymen; the adherence of the hymen to the labium minus of the same side from the development of cicatricial tissue; the existence of numerous folds on that labium; and its greater development and pigmentation are all irrefutable proofs of masturbating habits. In rape, with penetration, the hymen is, on the other hand, generally ruptured in several places, the seats of these tears are not adherent to the nympha, and the hymen undergoes retraction and may present minute carunculæ free in the vagina.

[2] Société de Médecine Légale, March 12th.

Surgical Operations and the Lay Press.

Your readers may remember that in my letter of March 3rd relating to exophthalmic goitre I spoke of the death of a young girl who had succumbed after the operation of exothyropexia performed in Dr. Brissaud's wards at the Salpêtrière. Some days ago there appeared in a certain evening sheet the following sensational heading in large type: "Un Meurtre Médical," which, as it turned out, referred to the above-mentioned occurrence. The writer of this romance made out that the surgeon incriminated had been actuated by vivisectional sentiments in performing an unnecessary and cruel operation on the poor unwilling victim. The said scribbler had evinced his ignorance of the hospital of which this barbarous proceeding had been the scene, and he had even applied at the wrong establishment for information. The cry was, however, taken up by other journals, and "*l'incident de la Salpêtrière*" became town talk. From a letter addressed by Dr. Brissaud to Professor Brouardel, Dean of the Faculty—a letter in which the dean is asked to lay the case before the Director of the Assistance Publique—it transpires that Professor Poucet of Lyons, the inventor of the operation, was the operator. Dr. Brissaud had in his wards two young women with exophthalmic goitre, unamenable to ordinary medical treatment. One was, at her own request, operated on with complete success. The other, the deceased, was a minor, and the consent both of herself and of her parents was obtained before operative measures were taken. The affair came in due course before the Municipal Council, and a resolution was carried urging the authorities to exercise more vigilance and discouraging operations in Paris hospitals by provincial surgeons. It is probable that nothing more will be heard of a subject which should never have found its way into the columns of political papers.

Professor Charcot's Successor.

The mention of Dr. Brissaud's name reminds me that at a recent gathering of the Professors of the Faculty the following candidates to the chair (Clinique des Maladies Nerveuses), so long held by the late Professor Charcot, were approved in the order below mentioned: (1) Dr. Raymond, (2) Dr. Déjerine, (3) Dr. Brissaud. We may therefore regard the final election of Dr. Raymond as a foregone conclusion.

March 19th.

Medical News.

ROYAL INSTITUTION.—The following are the lecture arrangements after Easter:—Professor J. A. Fleming, four lectures on Electric Illumination; Professor J. W. Judd, three lectures on Rubies: their Nature, Origin, and Metamorphoses; the Rev. W. H. Dallinger, three lectures on the Modern Microscope; Mr. F. Seymour Haden, two lectures on the Etching Revival; Professor J. F. Bridge, two lectures on Music: 1. Musical Gestures; 2. Mozart as a teacher; Professor Dewar, three lectures on the Solid and Liquid States of Matter; Professor W. M. Flinders Petrie, three lectures on Egyptian Decorative Art; Mr. H. D. Traill, two lectures on Literature and Journalism; Mr. John A. Gray, two lectures on Life among the Afghans; Captain Abney, three lectures on Colour Vision (the Tyndall Lectures); Mr. Robert W. Lowe, three lectures on the Stage and Society. The Friday evening meetings will be resumed on April 6th, when a discourse will be given by Professor Victor Horsley, on Destructive effects of Projectiles; succeeding discourses will probably be given by Professor J. J. Thomson, Dr. J. G. Garson, Professor H. Marshall Ward, Dr. G. Sims Woodhead, the Rev. S. Baring-Gould, Professor A. M. Worthington, Sir Howard Grubb, Professor Oliver Lodge, Professor C. V. Boys, and other gentlemen.

THE SALARIES OF POOR-LAW MEDICAL OFFICERS.—On the consideration on Tuesday of an application for an increase of salary for the medical officer of the workhouse infirmary, the guardians of the East Preston Union, Sussex, had before them for comparison the salaries paid to the infirmary medical officers by other boards in the county. In applying for an increased salary Mr. F. C. Bryan, of Littlehampton, drew attention to the fact that the patients in the house had increased in numbers since his salary was fixed, between thirty-five and forty bottles of medicine weekly were dispensed, and the distance he lived from the house (four miles) meant an additional expense for horse hire. The clerk stated that he had ascertained that in the Westhampnett Union the patients in the infirmary averaged 15, the salary was £12; Steyning, 100, and £100; Lewes, 26, and £60; Cuckfield, 60, and £80; Petworth (two workhouses), 7, and £20, and 5, and £20 respectively; Midhurst, 21, and £20; Chichester, 32, and £25; Horsham, 89, and £35; and in their own workhouse they have an average of 67 patients and paid £50 per year. At the present time there were 68 patients in the infirmary and 216 inmates of the house. After some discussion it was decided to increase the salary to £60, a proposal that it should be £65 being negatived.

QUEKETT MICROSCOPICAL CLUB.—At a meeting of this club on March 16th, Mr. A. D. Michael (President R.M.S.), Vice-President, in the chair, a special vote of thanks was accorded to Mr. Morland, who had presented a series of thirty-seven slides to replace others found to be bad or wanting.—The chairman, on behalf of the subscribers, presented Mr. F. A. Parsons with an address and a valuable gold watch as a testimonial to his zealous endeavours as secretary of the excursions sub-committee during the last ten years to make these gatherings a success. A special series of pond-life slides, prepared and presented by C. F. Rousselet, was also awarded to him.—Mr. Parsons expressed his most sincere thanks for the kind and handsome manner in which they had rendered the excursions pleasant and profitable to those joining them.—Professor Edinger's photographic and drawing apparatus, made by Leitz, was exhibited by Mr. C. L. Curties.—Messrs. Swift exhibited and described their new biological microscope, which had the posterior limb of the tripod doubled and rotating on a pivot, thus giving increased steadiness to the stand and at the same time enabling it to be packed in a smaller case. It was explained that the pivot was provided with a strong spiral spring, which would prevent it becoming loose, and also take up any wear at the bearing surfaces.—Mr. E. M. Nelson's paper on the Determination of the Foci of Microscopical Objectives, Lantern and Camera Lenses by Arithmetical Formulæ was taken as read.—Mr. H. W. King read a paper on Amœbæ. A discussion ensued in which Mr. J. D. Hardy, the chairman, and the writer took part.—The secretary announced that the first excursion of the season would take place on Saturday, April 7th, at the Royal Botanic Gardens, Regent's-park.

FOOTBALL CASUALTIES.—On the 10th inst. a young man, aged twenty-years, during a match at Mill Hill-park, Acton, between the St. Thomas's and Rosslyn Park teams, fractured his clavicle, and was admitted to St. Thomas's Hospital.—On Saturday last, in a match between Pudsey Mechanics' Institute Football Club and Pudsey Trinity team, a youth collided with another player, sustaining an injury, and was removed to the Institute, and found to be suffering from a slight concussion of the brain.

THE METROPOLITAN ASYLUMS BOARD.—The work of the hospital continues slightly to decrease according to the returns given by Mr. Mann at the last meeting. The number of notifications received by the board is slightly less, 1466 as compared with 1470. The number of admissions into the hospitals was 554, as against 564 in the previous fortnight. No explanation is yet afforded—at least it is not given in *The Times* report—of the interesting little bill of £117,000 for a temporary hospital.

THE ROYAL HUMANE SOCIETY.—The number of cases brought under the notice of this society during the past year has been the largest since its institution in 1774, the number of rewards conferred being 728. Of these thirty-nine were conferred on officers and men of Her Majesty's naval forces and fifty-seven went to the land forces. The police of the United Kingdom obtained thirty-five rewards. One hundred and seven persons in imminent danger were rescued in the Serpentine during the hot weather of last year but no fatalities occurred. The Stanhope Gold Medal, annually awarded to "the most deserving case," has been awarded to Captain S. W. Scrase-Dickins, 2nd Battalion Highland Light Infantry, who, on April 27th, 1893, whilst suffering from seasickness, jumped from the deck of the steamship *Peshawur*, at that time steaming at the rate of eleven and a half knots in the hour, in the Red Sea, and saved a Lascar who had fallen overboard.

THE DENTAL HOSPITAL OF LONDON.—The thirty-sixth annual meeting of this institution was held at the hospital in Leicester-square, on Thursday last, March 15th, under the presidency of Mr. J. Smith Turner, the vice-president. The annual report having been adopted, the chairman called attention to the satisfactory report for the year 1893. He urged very strongly the claims of the proposed new hospital, pointing out that from the sanitary and overcrowded state of the building, a new hospital was much needed; he further called attention to the great value of the institution as a teaching centre, from which excellently equipped dental surgeons are turned out, so that the institution was valuable, both as a charity and an educational establishment, and deserved therefore the hearty support of the public. Towards the £40,000 required for the new building, £9700 had been promised or collected; of this sum £2000 only had been contributed by the public, the remainder having been subscribed by the dental profession. The chairman ventured to think this should not be, and that the public should contribute more liberally towards so useful and deserving an object. During the meeting a cheque for £500 was handed in from Mr. Henry Harben, as a donation to the new hospital building fund.

THE LONDON WATER-SUPPLY.—A copy of the resolution recently passed by the London County Council regarding the monopoly of the London water-supply has been forwarded to all the metropolitan water companies with the request that they would inform the Council whether they would enter into negotiations for the sale of their waterworks. The Lambeth and New River Water Companies have merely acknowledged the receipt of the resolution. The Grand Junction, the Southwark and Vauxhall, and the East London Water Companies sent definite answers. The first named company said that they were unwilling at the present moment to enter into negotiations for the purpose of selling their works to the Council. The Southwark and Vauxhall Company say they have no intention or desire to sell their property, and the East London Company do not see their way to enter into negotiations for sale on the basis indicated in the resolution, at the same time they are willing to give their careful consideration to any definite and practical proposals which may be submitted by the Council to them. The Southwark and Vauxhall, the East London, and the West Middlesex Companies have Bills before Parliament which the Council have resolved to oppose, as the result of their being carried would be to increase the vested interests of the companies concerned, and increase the difficulties of the Council.

SANITARY WORK IN THE CITY.—At a meeting of the City Commissioners of Sewers on Tuesday Dr. Sedgwick Saunders, medical officer of health, gave a report of the sanitary work effected during the preceding week. By that statement it appeared that within that period 263 houses had been inspected, of which 22 required sanitary improvement in various particulars. In the course of February, out of a total delivery of 25,865 tons of meat at the Central Markets, 14 tons had been seized as being unfit for human food.

LOUIS KOSSUTH.—The death of Louis Kossuth at the advanced age of ninety-one removes from the stage of European history a man who in his time played a very important part. Some of us can recall the impression which the Hungarian patriot made in this country by his speeches in 1851-52. Orators, as much as poets, are born, not made; and Kossuth was a born orator, who made us familiar with the extraordinary spectacle of a pure Hungarian who by his remarkable fluency, eloquence, and dramatic power in the English language was able to draw large crowds of educated people to listen to him both here and in America. His style was founded on an intimate acquaintance with our tongue as presented in the Bible and Shakespeare. We need not recall the events of the war against Austria, or dwell on the brilliant and remarkable success which for some time attended the Hungarian force under its distinguished leaders, Görgey, Klapka, Darujanics, and Bem. Of the way in which they kept the Austrian army at bay there is no need to tell, nor of the disastrous termination of the struggle, when General Görgey was compelled to yield. Louis Kossuth was for a long time regarded as a traitor to his country, but has lived long enough to have had justice done to his name and reputation. General Görgey still lives and is hale and hearty. He was recently in this country as the guest of another friend and brother officer, Surgeon-Major Duka, who, previously to his entrance into the Indian Medical Service, had fought for Hungarian independence.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The New Session.

IT is not apparent that any questions of direct medical interest are likely to arise in the course of legislation in the Session that has just begun. It is satisfactory to find that in the reconstructed Liberal Ministry Sir Walter Foster still holds place, though it could have been wished that in the process he had received some promotion to which he is entitled, whether from a party point of view or from the ability in administration which he has shown. Great fears seem to be entertained of new terrors of income-tax. It is more than ever incumbent on the Chancellor of the Exchequer to remember the poverty of the professional classes and to distinguish between incomes dependent on property and those dependent on the uncertain life and health of the professional man.

The Marking of Foreign Goods.

The Bill dealing with this subject, which Colonel Howard Vincent has introduced in the House of Commons, is intended as an extension of the Merchandise Marks Act of 1887. It makes two important proposals. The first is that all imported goods which do not bear in a legible and conspicuous form a definite indication of the country where they were made or produced shall be refused admission into the United Kingdom. Exception is made in the case of goods declared by the authorities of the Customs Department to be incapable of being marked. The other proposal is that imported goods shall not be offered for sale in this country unless by means either of express notice or by a board, card, label, ticket, invoice, or other document the purchaser is made aware that they are imported and are not of home production. The Bill is backed by Colonel Howard Vincent, Sir Henry Howorth, Mr. William Johnston, Mr. Maclure, Colonel Bridgeman, Colonel Brookfield, Mr. Spencer, Mr. Havelock Wilson, Mr. Seton Karr, Mr. Field, and Mr. Wrightson.

The Irish Local Government Board.

Lord Howth has given notice in the House of Lords that he intends to call attention to the late reports of Mr. Stafford, medical sanitary officer to the Local Government Board of Ireland, on the sanitary condition of the towns of Howth and Clontarf, and to move: "That this House regrets that the report on Howth was issued by the Local Government Board as an official document meeting their support and approval." No date has yet been fixed for bringing on the subject.

The Royal Commission on Labour.

The Press Association expects that the Royal Commission on Labour will be framed on the following lines. The first part will be devoted to the consideration of such topics as the advisability of legislation calculated to promote the better settlement of labour conflicts, the establishment of industrial tribunals, boards of conciliation, official arbitrators, &c. The inquiries of the Commissioners have discovered great inequalities in the working efficiency and utility of trade unions and associations of employers, and that boards of conciliation have been most successful where the organisations have been most efficient. The establishment of statutory industrial tribunals might be of service in trade disputes, where the industries are unorganised, while the workmen are deterred by the cost from bringing the questions before the County Court; but upon the whole it will be found that the majority of the Commissioners have not recommended the institution of these special tribunals for deciding questions arising out of existing agreements. They incline to the opinion that the difficulty of obtaining suitable arbitrators in trade conflicts might be met if power were given to a public department to appoint, on the receipt of sufficient application, a suitable person to act. Such arbitrators might ultimately be made permanent officials.

The second part of the report will deal with: (1) wage rates; (2) hours of labour; (3) employment of non-unionist workmen; (4) questions of apprenticeship; and (5) demarcation of work. The majority of the Commissioners are understood to hold all the above points as outside the range of legislation with the exception of the case of the hours of labour. On this head the majority are opposed to the establishment by law of a universal eight hours day, but they are in favour of the extension of existing legislation in regard to women and children, and in regard to hours of labour in industries certified to be especially dangerous to health in the case of women and young persons. They are also in favour of sanitary legislation requiring occupiers of workshops to obtain a licence, which should not be granted unless a workshop were made sanitary.

One of the most important features of the report will be the review of the evidence in regard to the employment of women, which has been compiled from the reports of the lady Assistant Commissioners.

HOUSE OF COMMONS.

THURSDAY, MARCH 15TH.

New Bills.

Amongst the large number of private Bills bearing more or less remotely on medical and sanitary matters, for the introduction of which leave was obtained, may be mentioned the following:—Colonel Palmer: To provide pensions in old age for the provident poor. Mr. Round: For more effectually securing the purity of beer. Mr. Hopwood: To abolish the compulsion to vaccinate. Mr. Carvell Williams: To further amend the Burial laws. Sir R. Webster: To amend the law for the prevention of cruelty to children. Mr. C. H. Wilson: To prohibit the sale of intoxicating liquors on Sundays. Captain Grice-Hutchinson: To amend the Coroners Act, 1887. Mr. Wootton Isaacson: To amend the law relating to the adulteration of food. Mr. Neville: To amend the Merchant Shipping Act, 1854. In the list of Bills were several the object of which was to ensure more efficiently the identification of foreign and colonial articles of food.

Explosions from Coal Dust.

Replying to a question put to him by Mr. John Ellis, the Home Secretary said that at the conclusion of the evidence the Commission to inquire into explosions in coal mines from coal dust adjourned in order to await the result of certain experiments. These experiments were now finished, and he was informed by the chairman that they would now proceed to the consideration of the report, which he hoped would be presented not later than the end of June next.

Tuberculosis.

Mr. Shaw Lefevre, in reply to a question, said that he was informed that the report of the Bovine Tuberculosis Committee might be expected very shortly.

Treatment of Inebriates.

In answer to a question by Mr. Knowles, the Home Secretary said that instructions had been given to the Parliamentary draughtsman to prepare a Bill to be introduced into Parliament for the purpose of carrying out the recommendations contained in the report of the departmental committee on the treatment of inebriates. Mr. Asquith further stated that the Under-Secretary hoped to introduce the measure at an early date.

The Army Hospital Corps.

Mr. Campbell-Bannerman, replying to a question put by Mr. Arnold-Forster, said the transport required for medical services in war time would be supplied from the mounted companies of the Army Service Corps, and the men so employed, being protected by the *brassard*, would be defended by the Geneva Convention. The right hon. gentleman further remarked that in Austria, France, Germany, and Russia the service corresponding with that of the hospital corps was provided from the combatant forces.

The Medical Department of the Local Government Board.

In Supply, Mr. T. G. Bowles raised a question with regard to the supplementary vote of £1081 for salaries and expenses of the Medical Department of the Local Government Board. He wanted to know if that expenditure had been incurred by the visitation of inspectors to different districts for the purpose of providing against the entrance of cholera.—Mr. Fowler, in answering the question, said that when an outbreak of cholera occurred the demand was immediately made that the Local Government Board should without delay send down inspectors to investigate the circumstances connected with the outbreak, and to see that all proper precautions were taken to limit its spread.

It was in consequence of the efficient manner in which that duty was discharged that the Department was enabled to grapple so successfully with the scourge in the autumn of 1892 and that of the following year. He was sure that all would agree that the money so spent was worthily expended, and that the country was under great obligation to those gentlemen for their services.

Famine in the Arran Islands.

In reply to Mr. Sheehy, Mr. J. Morley stated that representations had been made to him on the subject of the destitute condition of the people in the Arran Islands, and an inspector of the Local Government Board had been sent down to make inquiry into the matter. It was found that the recent prolonged gales had seriously impoverished the inhabitants of the Isles, but means had been taken as far as possible to cope with any unexpected emergency.

MONDAY, MARCH 19TH.

Lunatics in Unlicensed Houses.

This subject was raised by a question addressed to the Home Secretary by Mr. Labouchere, who, in reference to the recent case of the Commissioners in Lunacy *v.* Sherrard, wished to know if any change of the law was proposed in order to guard against the danger of the confinement of persons of unsound mind in unlicensed houses.—Mr. Asquith said he was informed that Mr. Justice Grantham had stated that in order to get a conviction for keeping two lunatics in an unlicensed house it must be proved that the two persons detained were not only of unsound mind, but that they were treated by the defendant as persons of unsound mind. He (Mr. Asquith) was not aware that in practice the law had been found defective, but should any case of abuse be proved he would consider whether an amendment was desirable or practicable.

TUESDAY, MARCH 20TH.

Foreign and Home-fed Meat.

Dr. Farquharson asked if, in the event of a departmental committee being appointed to inquire into the working of the Margarine and Sale of Food and Drugs Acts, the subject of the sufficiency or otherwise of the present law to check the fraudulent sale of foreign for home-fed meat might not be included in it.—Mr. Gardner was of opinion that the two subjects were not sufficiently cognate in character to make it desirable that they should be conjoined.

Medical Attendance in the Post Office.

In reply to a question put by Mr. Luttrell, Mr. A. Morley said the department was exceeding its medical system as opportunity offered. The difficulty of establishing any system of remuneration for medical attendance on post office servants other than by a capitation grant arose from the scattered nature of their employment. He feared that under present circumstances he could hold out no hope of the adoption of any system which would supply every post-office servant in the kingdom whose pay did not exceed £150 a year, with medicine and medical attendance gratuitously.

Vaccination.

Mr. Hopwood asked if the Government intended again to introduce the Bill to carry out the fifth report of the Royal Commissioners on Vaccination.—Mr. Asquith said he feared that it would be too sanguine to hope that the Bill, although it merely gave effect to the unanimous recommendations of the Commission, would be treated as non-contentious, and it would therefore be a waste of time to introduce it.

BOOKS ETC. RECEIVED.

BAILEY & FAIRCHILD Park-row, New York.

Syphilis in the Innocent (Syphilis Insontium), clinically and historically considered, with a Plan for the Legal Control of the Disease. By L. D. Bulkley, A.M., M.D. 1894. pp. 398.

BLACKIE & SON, 49, Old Bailey, London, E.C.

Blackie's Science Text-books: the Student's Introductory Handbook of Systematic Botany. By Jos. W. Oliver. 1894. pp. 366. Price 4*s.* 6*d.*

CASSELL & CO., London.

Clinical Manuals for Practitioners and Students of Medicine. The Rectum and Anus: their Diseases and Treatment. By Chas. B. Ball, M.Ch., F.R.C.S. Irel. Illustrated. Second Edition. 1894. pp. 439.

CHATTO & WINDUS, Piccadilly, London, W.

Herbert Fry's Royal Guide to the London Charities. Edited by John Lane. Thirtieth Annual Edition. pp. 415. Price 1*s.* 6*d.*

CHURCHILL, J. & A., 11, New Burlington-street, London.

The Human Element in Sex. By Dr. Elizabeth Blackwell. New Edition. 1894. pp. 76. Price 2*s.* 6*d.*

The National Dispensatory. By A. Stillé, M.D., LL.D., J. M. Maisch, Phar. D., and others. Fifth Edition. Illustrated. 1894. pp. 1903. Price 36*s.*

CISCHER, GUSTAV, Jena.

Atlas der Topographischen Anatomie des Menschen. Für Studierende und Aerzte. Von Drs. Karl Bardeleben und H. Haeckel. 1894.

CKENRY & CO., Bouverie-street, London, E.C.

In the Green Park, or Half-pay Deities. By F. Norreys Connell. Illustrated. 1894. pp. 240. Price 3*s.* 6*d.*

KEGAN PAUL, TRENCH, TRÜBNER, & CO., Charing-cross-road, London, W.C.

B. Bradshaw's Dictionary of Mineral Waters, Climate Health Resorts, Sea Baths, and Hydropathic Establishments. With a Map. 1894. pp 412. Price 2*s.* 6*d.*

KIMPTON, HENRY, High Holborn, London; and HIRSCHFELD BROS., Bream's-buildings, Fetter-lane, London.

Food and Drink, Rationally Discussed. By Thos. ton M.D. Durh. Second Edition. 1894. pp. 124.

LIPPINCOTT, J. B., COMPANY, Philadelphia.

International Clinics. A quarterly of Clinical Lectures. By Professors and Lecturers in the leading Medical Colleges of the United States, Great Britain, and Canada. Vols. I. to IV. Third Series. 1893 and 1894.

LIVINGSTONE, E. & S., Edinburgh.

The Student's Handbook of Medicine and Therapeutics. By A. Wheeler, L.R.C.P. Edin. Illustrated. 1894. pp. 336.

LONGMANS, GREEN, & CO., London.

Dr. Chesterfield's Letters to his Son on Medicine as a Career. By Sir William Dalby. Reprint. 1894. pp. 60. Price 1*s*

MACLEHOSE & SONS, Glasgow.

Clinical Manual for the Study of Diseases of the Throat. By J. W. Downie, M.B. 1894. pp. 263.

MACMILLAN & CO., London.

Aero-Therapeutics, or the Treatment of Lung Diseases by Climate. Being the Lumleian Lectures for 1893. With an Address on the High Altitudes of Colorado. By C. T. Williams, M.D. Oxon., F.R.C.P. 1894. pp 187. Price 6*s.* net.

Methods of Pathological Histology. By C. von Kahlden. Translated and edited by H. M. Fletcher, M.D. Cantab., M.R.C.P. With an Introduction by G. Sims Woodhead, M.D. 1894. pp. 171. price 6*s.*

REBMAN, F. J., Adam-street, Strand, London.

An American Text-book of the Diseases of Children. By American Teachers. Edited by Louis Starr, M.D., and T. S. Westcott, M.D. Illustrated. 1894. pp. 1190.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by Wm. Pepper, M.D., LL.D. In Two Volumes. Illustrated. Vol. II. 1894. pp. 1046.

An American Text-book of Gynæcology, Medical and Surgical. Edited by J. M. Baldy, M.D. Illustrated. 1894. pp. 713.

SAMPSON, LOW, MARSTON, & CO., Fetter-lane, London, E.C.

An Essay on the Instruction and Amusements of the Blind. By Dr Guillié. With Engravings. Reprint, 1894. pp. 154.

An Illustrated Encyclopædic Medical Dictionary. By F. P. Foster, M.D., and others. Vol. IV. Min—Zyt.

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Man an Organic Community. By John H. King. In two volumes. Vols. I. and II. 1893.

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The Medical Annual and Practitioners' Index. 1894. Twelfth year. pp. 790. Price 7*s.* 6*d.*

Practical Nursing Series; No. 2—Disinfection; by Mary Truman and Edith Sykes, A.S.I. (the Roxburghe Press, Victoria-street, Westminster); price 3*d.*—The Aerial Oxidation of Terpenes and Essential Oils; by C. T. Kingzett, F.I.C., F.C.S., assisted by D. Homfray, B.Sc. (Harrison & Sons, St. Martin's-lane, London).—An Essay on the Chief Causes of Diseases and their Prophylactic or Preventive Treatment: a Summary of Medicine and Surgery; by C. Thamodaramuillay, medical practitioner (Times of Ceylon Press, Colombo; 1894).—The Quarterly Journal of Microscopical Science; March, 1894 (J. & A. Churchill, New Burlington-street, London); price 10*s.*—Catechism Series: Physiology; Part III.—Blood, Respiration (W. & S. Livingstone, Edinburgh); price 1*s.* net.—Handbuch der Speciellen Therapie innerer Krankheiten; von Dr. F. Penzoldt und Dr. R. Stinzing; Erste und Zweite Lieferung; 1894 (Gustav Fischer, Jena).—The Story of Sir Walter Raleigh: a Day in a Tobacco Factory; by Joseph Hatton (published at the office of "Cope's Tobacco Plant," Liverpool, 1893); price 3*d.*—The Surgery of the Hand; by Robert Abbe, M.D.; reprint from the New York Medical Journal, Jan. 13th, 1894.—Sarcoma of the Kidney: its Operative Treatment; by R. Abbe, M.D., of New York; reprint from the Annals of Surgery, University of Pennsylvania Press, Philadelphia, January, 1894 (Cassell & Company, London).—Vaso-motor Ataxia: a Contribution to the subject of Idiosyncrasies; by Solomon Solis-Cohen, M.D. Philadelphia; reprint from the American Journal of the Medical Sciences, February, 1894.—Some of the Throat Conditions observed in Gouty Subjects; by S. Solis-Cohen, M.D.; reprint from the Medical News, Nov. 4th, 1893, Philadelphia.—A case of Uræmia in an Alcoholic Patient with Visceral Complications, successfully treated by Venesection, Diaphoresis, and Nitro-glycerine; Philadelphia Hospital; service of S. Solis-Cohen, M.D.; reprint from the Medical News, March 18th, 1893.—La Anoxihemia Barometrica; La Tuberculosis en las Altitudes: Estudio Practicado en el Instituto Medico Nacional; par le Dr. Daniel Vergara Lope (Oficina Fip. de la Secretaria de Fomento, Mexico, 1893).—The Psychological Review; March, 1894 (Macmillan & Co., London).—Annals of Ophthalmology and Otology; edited by I. P. Parker, M.D., Saint Louis, Mo.; January, 1894 (published quarterly, Saint Louis, Missouri, U.S.A.).—Archives de Neurologie, Numéro 85 (Mars); vol. xxvii, 1894 (Bureau du Progrès Médical, Paris).—The Human Pancreatic Ferments in Disease; by V. D. Harris, M.D., and G. A. Crace-Calvert; reprint from St. Bartholomew's Hospital Reports, vol. xxix.—Notes on Lightning.—Note upon One or Two Points in the Comparative Histology of the Pancreas; by V. D. Harris, M.D., F.R.C.P., and W. J. Gow, M.D., M.R.C.P.; reprint from the Journal of Physiology, vol. xv., No. 4, 1893.—Wilson's Handy Books: Law of Trustees; by R. Denny Urlin,

Barrister-at-law; new edition. Also, on the Investment of Trust Funds under the New Law; by R. D. Urlin; third edition (Effingham Wilson & Co., Royal Exchange London, 1894); price 1s. each net.—The Royal Natural History, vol. i., part 5; edited by R. Lydekker, F.G.S., F.Z.S. (F. Warne & Co., London); price 1s. net.—Studies from the Department of Pathology of the College of Physicians and Surgeons, Columbia College, N.Y.; vol. iii.; for the Collegiate Year 1892-1893; reprints (Jas. Doughorty, New York).—Contribution à l'Étude Histologique de l'Epithéliome Pavimenteux (Carcinome de la Peau), Travail de l'Institut Pathologique de Genève; par le Dr. S. Keser à Genève (G. Masson, Paris, 1894).—Annals of Ophthalmology and Otology; edited by Jas. P. Parker, M.D., and others; January, 1894 (Dr. J. P. Parker, Saint Louis, Missouri, U.S.A.).—Shipowners and Ships' Surgeons; by Charles Henry Leet, F.R.C.S. (Seaforth, Liverpool, 1893); price 1d.—The River Severn considered as a Source of Drinking Water; by J. H. Garrett, M.D., F.L.S. (John Bellows), Gloucester.—The Strand Magazine, March, 1894.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ADAMS, WEBSTER, M.R.C.S., has been reappointed Medical Officer for the Sixth Sanitary District of the Woodbridge Union.

BAINE, L. A., M.D., B.S.Durh., D.P.H.Camb., has been appointed Assistant Medical Officer to the Monsall Fever Hospital of the Manchester Royal Infirmary.

BROCKLESBY, R., L.R.C.P., L.M.Edin., M.R.C.S., F.R.M.S., has been appointed Vaccination Officer for the Eastern Division of the Grimsby Union.

BRYAN, J. M., M.D.Aberd., F.R.C.S., has been reappointed Medical Officer for the All Saints Sanitary District of the Northampton Union.

CUMING, C. H., M.R.C.S., has been appointed Medical Officer *pro tem.* to the Plymouth Workhouse.

DALBY, JOHN LYTTLETON, M.R.C.S., L.R.C.P., has been appointed Senior House Surgeon to the East Suffolk Hospital.

DAVIES, B. T. E., L.R.C.P., L.M.Edin., M.R.C.S., has been appointed Medical Officer for the New Tredegar Sanitary District of the Bedwellty Union.

DAVIS, A. P., M.R.C.S., has been reappointed Medical Officer for the Fourth Sanitary District of the St. Austell Union.

DEMPSEY, M. S P., M.D., B.Ch Dublin, has been appointed Demonstrator of Anatomy to the Catholic University School of Medicine, Dublin.

ECCLES, W. MCADAM, M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the City of London Truss Society.

EDWARDES-KER, G. C., L.R.C.P.Lond., M.R.C.S., has been reappointed Medical Officer for Nos. Three and Seven Sanitary Districts of the Woodbridge Union.

ERSKINE, R., M.D., M.Ch Irel., has been reappointed Medical Officer of Health for the Camborne Sanitary District of the Redruth Union.

FAGAN, P. J., L.R.C.P., L.M., L.R.C.S.Irel., has been appointed Demonstrator of Anatomy to the Catholic University School of Medicine, Dublin.

FISHER, J. A., L.R.C.P., L.M.Edin., L.F.P.S Glasg., has been re-appointed Medical Officer of Health for Garston.

HAMILTON, R., M.B., C.M.Glasg., has been reappointed Medical Officer of Health for Ryther and district.

HAMMOND, W., L.R.C.P., L.M.Edin., M.R.C.S., has been appointed Medical Officer of Health for the Sixth Sanitary District of the Liskeard Union, vice Cheves, resigned.

HUNTINGTON, WM., L.R.C.P.Lond., M.R.C.S., has been reappointed Medical Officer of Health for St. Andrews.

KEER, J. C., M.R.C.S., has been reappointed Medical Officer for the Eighth Sanitary District of the Woodbridge Union.

MCARDLE, J. S., L.R.C.P., L.M., F.R.C.S.Irel., has been appointed Assistant to the Professor of Operative Surgery, Catholic University School of Medicine, Dublin.

MURPHY, DANIEL, M.B., B.Ch. Irel., has been appointed Resident Physician to the Cork Fever Hospital, vice Tuohy.

POMFRET, H. W., M.D.Vict., Ch.B., L.R.C.P.Lond., F.R.C.S., has been reappointed Surgical Registrar to the Manchester Royal Infirmary.

POWER, S. B., M.R.C.P., L.M., L.R.C.S.Irel., has been appointed Port Medical Officer for Kingsdown.

PURVIS, WM. P., L.R.C.P.Lond., B.Sc., M.R.C.S., has been appointed House Surgeon to the Royal South Hants Infirmary, vice Ward, resigned.

REES, HUGH, M.R.C.S. has been reappointed Medical Officer of Health for the Carnarvonshire combined Sanitary Districts.

SHUTTLEWORTH, G. E., B.A., M.D., late Medical Superintendent to the Royal Albert Asylum, Lancaster, has been appointed Lecturer on Physiology and Hygiene at the Battersea Polytechnic Institute.

STAR, PAUL, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior House Surgeon to the Clayton Hospital and Wakefield General Dispensary, vice J. W. Bone, M.B., C.M. Edin., resigned.

STEPHEN, JAMES, M.D., C.M.Aberd., has been appointed Deputy Medical Officer for the Burgh of Peterhead.

STEPHENSON, G. S., M.D., C.M.Edin., has been appointed Vaccination Officer for the Western No. 1 Division of the Grimsby Union.

THOMSON, D. G. P., M.B., C.M.Edin., has been appointed Medical Officer *pro tem.* for the Penrith Rural and Urban Sanitary Districts.

THOMSON, ST. CLAIR, M.D. Lond., M.R.C.P. Lond., F.R.C.S. Eng., has been appointed Senior Clinical Assistant to the Throat Hospital, Golden-square, vice Arthur H. Cheatle, F.R.C.S. Eng., resigned.

TURNER, GEORGE, M.B Camb., D.P.H., L.R.C.P.Lond., M.R.C.S., has been reappointed Medical Officer of Health for Bishop Stortford.

VOELCKER, J. A., Ph.D., has been appointed a District Agricultural Analyst under the Fertilisers and Food Stuffs Act by the East Riding County Council.

WADDY, F. H., M.B., C.M. Glasg., has been appointed Non-resident House Surgeon to the Brighton, Hove, and Sussex Throat and Ear Hospital, vice R. S. Wright, M.R.C.S., resigned.

WARE, HENRY S., B.A., M.B., B.S. Camb., has been appointed Resident Medical Officer to the City of London Hospital for Diseases of the Chest, Victoria Park.

WESTMACOTT, F. H., L.R.C.P.Lond., M.R.C.S., has been appointed Resident Medical Officer to the Barnes Convalescent Home of the Manchester Royal Infirmary.

WILLIAMS, ALFRED J., L.R.C.P.Lond., M.R.C.S., has been appointed District Medical Officer and Public Vaccinator for the Parish of Wandsworth.

WOAKES, C. E., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the London Throat Hospital, Great Portland-street, W.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BEDFORD GENERAL INFIRMARY AND FEVER HOSPITAL.—House Surgeon for one year. Salary £100 a year, with apartments, board, lodging, and washing.

CARNARVONSHIRE AND ANGLESEY INFIRMARY, Bangor.—House Surgeon. Salary £70 per annum, with board and lodging in the house.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Pathologist. Salary 100 guineas per annum. Applications to the Secretary at the office, 24, Finsbury-circus, E.C.

EAST LONDON HOSPITAL FOR CHILDREN, Glamis-road, Shadwell, E.—House Physician. Board, lodging, and washing provided.

LEITH HOSPITAL.—House Physician, House Surgeon, and Surgeon for the Out-door Department for six months. Salary to each office is at the rate of £50 a year, with board in the hospital.

LIVERPOOL NORTHERN HOSPITAL.—Resident House Surgeon's Assistant (ambulance duty) for six months. Board and lodging provided.

MORPETH DISPENSARY.—House Surgeon. Salary £120 per annum, with furnished house, coal, and gas.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART AND PARALYSIS, 32, Soho-square.—Resident Medical Officer for six months. Honorarium 10 guineas.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (ALBANY MEMORIAL), Queen-square, Bloomsbury, W.C.—Senior House Physician. Salary £100 per annum, with board and apartments.

ROYAL COLLEGE OF PHYSICIANS, London.—Milroy Lecturer on State Medicine and Public Health.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—Secretary.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Surgeon. Salary £100 per annum, with board and lodging.

SHEFFIELD SCHOOL OF MEDICINE.—Tutor, to take charge of Dissecting-room and hold Classes in Anatomy and Physiology. Salary £124 per annum.

SOUTH-EASTERN FEVER HOSPITAL, Hatfield-street, New Cross-road, S.E.—Dispenser. Salary 35s. per week, with dinner daily.

UNIVERSITY COLLEGE, Bristol.—Faculty of Medicine.—Medical Tutor. Stipend £125 per annum. Applications to Dr. E. M. Skerrist, Dean.

WARMINSTER LOCAL BOARD.—Medical Officer of Health for the Local Board District of Warminster. Salary £30 guineas per annum.

Births, Marriages and Deaths.

BIRTHS.

BULLOCK.—On March 16th, at Eastgate House, Warwick, the wife of Roger Bullock, M.R.C.S., of a daughter.

BURNSIDE.—On March 13th, at Fort George, Inverness-shire, the wife of Surgeon-Captain E. A. Burnside, Army Medical Staff, of a daughter.

CADELL.—On March 18th, at Clare House, Tiverton, the wife of Nevil P. Cadell, L.R.C.P., &c., of a son.

FERGUSON.—On March 17th, at 25, Rutland-street, Edinburgh, the wife of James Haig Ferguson, M.D., F.R.C.P.E., of a daughter.

HOPKINS.—On March 19th, at 5, Picton-place, Swansea, the wife of G. Herbert Hopkins, F.R.C.S Eng. &c., of a son.

MARRIAGE.

ADAM—NESS.—On March 20th, at St. John's-wood Presbyterian Church, John Adam, M.D., eldest son of Æneas Adam, J.P., Humberston, Ross-shire, to Annie, the fourth daughter of the late James S. Ness, J.P., of London.

DEATHS.

BROXHOLM.—On March 19th, at Belmont, Woodside-avenue, North Finchley, Frederick Giles Broxholm, M.D., aged 72 years.

RICHARDS.—On March 15th, at 361, Moseley-road, Birmingham, after a short illness from acute pneumonia, William Richards, M.D.Edin., aged 33.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 21st, 1894.

	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Mar. 15	29·37	N.E.	42	41	64	45	41	0·29	Cloudy
,, 16	29·83	N.W.	40	38	80	51	37	—	Bright
,, 17	30·20	N.W.	36	35	85	48	34	..	Foggy
,, 18	30·30	S.W.	40	38	52	48	35	..	Foggy
,, 19	30·32	S.W.	38	37	67	51	36	—	Foggy
,, 20	30·27	N.E.	49	48	70	54	37	..	Overcast
,, 21	30·26	N.E.	44	43	91	54	43	..	Fine

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

WHAT IS THE HYPODERMIC DOSE OF STRYCHNINE?

To the Editors of THE LANCET.

SIRS,—I should like to hear what some of your correspondents who have had experience in the use of hypodermic injections of strychnine consider the most useful dose (firstly) in those very numerous cases where failure of the heart's action and failure of respiration seem threatened, and (secondly) in cases of chloral poisoning. The question is a very important one, because the first class includes all those cases in which one hopes to tide the patient over a critical stage, as, for example, in cases of severe shock, or, again, in the worst stages of typhoid fever or pneumonia. It is difficult to find any definite statements laid down in the text-books as to the dose, and it would appear that very wide differences occur in the practice of different physicians. The full Pharmacopœial dose of the liquor strychninæ is ten minims; but I know practitioners who consider from fifteen to twenty minims the least that is likely to do good in the first class of cases that I have alluded to. As regards chloral poisoning, I see that Dr. Murrell, in his well-known book on the treatment of cases of poisoning, mentions a hypodermic injection of two minims of a 1 in 50 solution of nitrate of strychnine. Now, since chloral is one of the antidotes to strychnine, surely this must be absolutely inadequate in such cases. In the interesting case of chloral poisoning reported in THE LANCET of Jan. 6th of the present year two injections of liq. strychninæ were given—four minims and three minims. It is stated that no benefit was derived therefrom; but was this to be wondered at?

I am, Sirs, yours faithfully,

March 17th, 1894. ALEXANDER B. BOYD.

AN OVERDOSE OF SULPHONAL.

To the Editors of THE LANCET.

SIRS,—There being so few published cases of an overdose of sulphonal I think the following notes may be deemed worthy of record. I was called at 2 P.M. to see a patient who had been "fast asleep" since 9 A.M. I found her in a state of coma, livid, with widely dilated pupils, stertorous breathing, and a rapid (125) small pulse. On investigation I found that a box of 5gr. sulphonal tabloids had disappeared. The box originally contained twenty-five tabloids and only four of them could be accounted for. Later I found that the patient had taken twenty of the tabloids, but she apparently had no recollection of the time when she swallowed them. At 4.30 P.M. the pulse had improved, the lividity had disappeared, and there was very slight conjunctival and plantar reflex. At 7 P.M. she was sensible for a minute or two, and at 10.30 P.M. talked quite rationally for a few minutes. During the next twenty-four hours she slept, being aroused every two or three hours for nourishment. There was no headache or inconvenience of any sort. I think the rapidity with which the dangerous symptoms passed away is remarkable. At 7 P.M. she was out of danger. The patient was in good health, but suffered from hysteria.

I am, Sirs, yours faithfully,

Torquay, March, 1894. W. A. WINWOOD SMITH.

Ernest Vallam.—A few years ago it was decided by the County Court judge at Croydon that a medical officer of a workhouse was not entitled to a fee for attendance and giving evidence at an inquest on the body of a person who had died in the institution. This decision has not been appealed against.

Mr. W. R. W. James.—Not necessarily so. Particulars too meagre.

ESSENCE OF COFFEE IN NARCOTIC POISONING.

To the Editors of THE LANCET.

SIRS,—Engaged a short time ago with a case where an overdose of some opiate was suspected, I had just ordered strong coffee to be made, when my eye was caught by a bottle of one of the familiar essences of coffee on the mantelpiece of the patient's bedroom. Following an obvious idea, I mixed a few teaspoonfuls of the essence with a little water, and administered the dose with excellent effect. The case was not, as it turned out, serious; but it occurs to me that the concentrated form of such essences, and the immediate administration their form renders possible, deserve publication. I myself certainly never till this occasion thought of the advantages I thus became acquainted with, and perhaps some of your readers may find this note of use to them in some similar future emergency.

Believe me, Sirs, yours truly,

C. MACIVER CAMPBELL, M.A., M.D., &c.,
Consulting Physician, Perth District Asylum.

Edinburgh, March 15th, 1894.

E. J. H.—Unless the cause can be ascertained, and is removable, treatment for canities is not very satisfactory. General invigorating measures should be adopted, and five minims of tincture of jaborandi three times a day might be tried, watching carefully to avoid its depressing effects and to guard against chills while taking the drug.

"THE MORTALITY FROM CANCER."

To the Editors of THE LANCET.

SIRS,—Your correspondent, Dr. F. R. Walters, in common with certain other members of the profession, seems to have been entirely carried away, in arguing against the increase of cancer, by the novelty of an actuary applying his art to an investigation of mortality statistics—a condition of things which is not surprising in view of the fact that an actuary's figures for the most part require an actuary to understand them. But the whole question of whether or not cancer is increasing must, so far as these islands are concerned, be based upon no surer foundation than speculation until, at all events, the records at Somerset House become more trustworthy. Too little evidence and too much speculation would aptly express the position both of those who argue in favour of and against the increase of cancer.

I am, Sirs, yours faithfully,

March 17th, 1894. F.R.C.S.

L. W. K. must try to discover some friend who would advance him means to prosecute his education. The appeal to all graduates seems unpractical.

ADVERTISING IN BRISBANE.

IT is very sad to see the advertisements by medical men in Brisbane. Men in leading practice readily rush into the newspaper to announce their return to work after a brief holiday. Surely, a better example might be expected, and one more encouraging to those who try to uphold the traditions of the profession. The following are specimens from the *Brisbane Courier* and the *Brisbane Telegraph* respectively:—

"Dr. Taylor has returned to town, and resumed practice."

"Dr. Thomson has returned to town, and resumed practice. Wickham terrace, Jan. 29, 1894."

"Dr. Finemore may be consulted from 8 to 10.30 A.M. and 6 to 7.30 P.M., Bowen terrace (near Convent); and 1 to 2 P.M., Henderson's Dental Rooms, Queen street, opposite Australian Hotel."

"Dr. Lucas, Wakefield Buildings, Adelaide street, opposite Finney, Isle's. Consultations Free. Medicine only charged. Anti-fever Lozenges for all Colds and Fevers, 3s. 6d.; Cough Lozenges for Chest Diseases, 2s. 6d. Daily, 1 to 5 P.M."

"Dr. C. J. Weekes has commenced practice as a Specialist on Diseases of the Eye. Eblana, Wickham-terrace. Consultation hours, 10 A.M. till 5 P.M."

X. Y. Z.—The matter is primarily a legal one—one of contract. So long as the engagement between a principal and an unqualified assistant does not include anything contrary to the Regulations of the General Medical Council we do not see that details of a pecuniary character come into question.

Exeter.—A consultant should not see the patient of a medical man at whose instigation he has been consulted without communication with the medical man.

"INFLUENZA: ITS ETIOLOGY AND TREATMENT."

To the Editors of THE LANCET.

SIRS,—I trust you will favour me with space in the columns of THE LANCET to reply to the criticisms of Dr. J. Hawkes on my letter of the 10th inst. My chief object in writing that letter was to show the remarkable action of bicarbonate of potash in the treatment of influenza, and to draw attention to the dangers of administering quinine in the same disease. Dr. Hawkes writes a letter which is philosophical and conventional, but not convincing. He deluges the humble potash with cold water simply because such treatment is empirical, exclusive, dogmatic, or Procrustean, and asks us to return to the curative quinine. I admire the boldness of this recommendation, for I think that the great majority of medical practitioners would like to draw a veil over the "quinine rage" which proved so calamitous in 1891. Dr. Hawkes gives us two forms of sequelæ—loss of taste and smell, and shocks of pain in the cutaneous nerves of the abdomen—which have not, as far as he knows, been generally mentioned; possibly he will find them noted in the category of concomitant symptoms. Finally, we are told that influenza is a neurotic disease. The most infectious fever we have to deal with is a neurotic disease. There is no doubt that influenza has a most depressing effect on the brain and nervous system, but so has diphtheria and other fevers. Influenza has also a special effect upon the fifth and seventh part of the cranial nerves, which proceed from an almost common origin in the brain; but diphtheria and other fevers affect special nerves in the same peculiar manner. So much for neurotic influenza. In a medical journal this week there appears a digest of the report of a special commission appointed to investigate the influenza epidemic of 1890 in Holland. That report shows conclusively that the treatment could only present the most deplorable results, and the main therapeutic agents were quinine and antipyrin. Dr. Hawkes considers the alkaline treatment "most deplorable" in England; it is sad to hear that the quinine treatment has proved most deplorable in Holland. Every discovery has been, and will be, freely criticised; but there can be little doubt as to the effectiveness of this simple treatment, which Mr. Crerar has placed in the hands of the profession, and which, I believe, has already saved thousands of lives.

I am, Sirs, yours faithfully,

Holbeach, March 20th, 1894. THOS. JACKSON, L.R.C.S. Edin.

"CHRONIC CONSTIPATION."

To the Editors of THE LANCET.

SIRS,—I would advise "M.R.C.S. & L.R.C.P. Lond." to induce his little patient to drink every morning, before breakfast, in hot water, about two ounces of the natural aperient water from the Franz Josef spring in Hungary. I would also recommend him to examine the rectum and ascertain if she is suffering from tight or contracted sphincter ani, and, if so, to have it stretched after the manner advocated by Dr. Clifford Allbutt.

I am, Sirs, yours faithfully,

Leeds, March 18th, 1894. R. J. SHAW, L.R.C.P. & S. Ed.

"AN OPERATION FOR ECTOPIA VESICÆ."

To the Editors of THE LANCET.

SIRS,—If "M.B., C.M." will communicate with me I shall be pleased to inform him how what I believe to be a very similar case of ectopia vesicæ was successfully treated by me a short time since.

I am, Sirs, yours obediently,

Hartree House, Westfield-terrace, Fulham, S.W., PERCY POPE.
March 18th, 1894.

COMMUNICATIONS not noticed in our present issue shall receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.). St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Great Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Great Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-sq. (2 P.M.), North West London (2 P.M.)

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

FRIDAY.—CLINICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Christopher Heath: Two cases of Rectangular Ankylosis of the Hip-joint treated by Operation.—Mr. G. R. Turner: A case of Aneurysm by Anastomosis.—Mr. Hurry Fenwick: Resection of Part of the Left Lower Lateral Wall of the Bladder for Recurrent Epithelioma.—Mr. Battle: A case of Traumatic Rupture of the Bile Duct.—Mr. Arbuthnot Lane: Large Stones in the Common Bile Duct producing Complete Obstruction; Fæcal Material in the Duct; Operation; Recovery.

LECTURES AND ADDRESSES.

WEDNESDAY.—WEST LONDON HOSPITAL (Hammersmith, W.).—5 P.M. Mr. Cheatle: Bacteriology of Wounds and Antiseptics. (Post graduate Course.)

During the week marked copies of the following newspapers have been received:—*Oldham Chronicle, Bolton Journal, Worcester Journal, Westmorland Gazette, Market Harborough Advertiser, Darlington Echo, Southampton Times, Yorkshire Evening Post, Road, Family Doctor, Birmingham Daily Post, Brighton Weekly News, Weekly Budget, Guardian, Sun, Manchester Guardian, Kelso Mail, Huddersfield Examiner, Pioneer Mail, Liverpool Courier, Times of India, Norfolk Standard, Llangollen Advertiser, Dorset City Chronicle, Cornwall Gazette, Local Government Chronicle, Reading Mercury, Sanitary Record, Weekly Free Press and Aberdeen Herald, Leeds Mercury, West Middlesex Standard, City Press, Bristol Mercury, Glasgow Herald, Hertfordshire Mercury, Surrey Advertiser, Builder, Telegraph (Brisbane), Brisbane Courier, Science Siftings, Tit Bits, West Middlesex Advertiser, Local Government Journal, Ilfracombe Chronicle, Devon Gazette, Crieff Journal, Highland News (Inverness), Central Glamorgan Gazette, Le Temps (Paris), Hayward's Heath Herald, Coleraine Chronicle, Sunday Times, Scotsman, St. Helens Newspaper and Advertiser, Scottish Leader, Carmarthen Journal, &c., &c.*

Communications, Letters &c. have been received from—

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B.—Dr. John F. Bullar, Southampton; Dr. T. R. Bailey, Bilston; Mr. Richard Barwell, London; Mr. W. A. H. Barrett, London; Mr. R. Bremner, Exeter; Messrs. Brown, Gould, and Co, London; Messrs. O. Berend and Co., London; Messrs. Bailey and Fairchild, New York; Blackburn Infirmary, Matron of; Bedford General Infirmary, Secretary of.

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F.—Mr. W. Fairbank, Windsor; Mr. G. A. Ferguson, London; Foreign Travel, Association for the Promotion of, London, Secretary of.

G.—Dr. H. C. Garth, Morden; Dr. M. Granville, London; Mr. R. W. Gowring, Cambridge; Mr. G. G. Giffard, Rangoon; Messrs. R. W. Greeff and Co., London; Messrs. Gibbs, Smith and Co., London.

H.—Dr. R. W. Haslett, Liverpool; Mr. W. Hay, Hull; Mr. J. T. Hislop, Ripley; Mr. E. K. Hanchin, London; Mr. J. Heywood, Manchester; Mr. H. Harper, Zaragoza, Spain; Messrs. Hertz and Collingwood, London.

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Y.—Dr. T. L. Young, Umballa, Punjab.

Letters, each with enclosure, are also acknowledged from—

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